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Fundamentals OF ECONOMICS

By

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PREFACE

This book has been written not with the intention to add yet one more text-book to the ones already available in the market for the further wilderness of the harassed student of Economics. In the writing of it the attempt has been made to present a study of Economics with the Allahabad tradition embodied in it. Since the days of Professor H. S. Jevons, that is from the inception of the Teaching University of Allahabad in 1922, the tradition has been set to approach the problems of Economics with special emphasis on theory. This process has been silently, but steadily maintained. We believe we have developed an attitude towards Economics that is rational without becoming traditional, free from the narrow classical sense. Indeed, in treading this path, we seem to have evolved a particularistic viewpoint. In reading the various portions of the book this will become more or less apparent. Along with this tendency, stress has been laid on the quantitative precision of propositions enunciated. In fact the endeavour in the higher ranges of the discussion of the subject has been to submit it to mathematical treatment. The text has been written with complete freedom by each author. To have attempted anything else would have been quite impossible! Economists, the world over, are known to be extreme individualists, to the point of being anarchical! But they have not been egotistical. Hence there is to be discerned a common unity of thought and purpose in the work.

It is necessary that the portion written by the different authors be indicated, though the project as a whole is a joint-product. Each portion bears the stamp of the thought and scholarship of the writer, who is entirely responsible for her or his particular approach to the question in hand. The authorship is as follows :—

PART I

| | |
|-------------------------------------|--|
| Scope, Methodology and Significance | Prayag Das Hajela, M.A. (Allahabad) |
| Economic Statistics | C. D. Thompson, M.A. (Princeton) |

PART II

| | |
|-------------|--|
| Consumption | Daya Shanker Dubey, M.A., LL.B. (Allahabad) |
|-------------|--|

PREFACE

PART III

Production

P. C. Jain, M. A., M. Sc.
(London)

PART IV

Rural and Urban Problems

(a) Problems of Agriculture Mahesh Chandra M. A. (Allahabad)

(b) (i) The Problems of Labour
(ii) Trade Unions
(iii) Minimum Wage S. K. Rudra, M. A. (Allahabad)
(iv) Social Security
(v) Town Planning and Housing

(c) Transport M. Thomas (Mrs.),
(Madras)

PART V

Theory of Exchange

S. N. Agarwala, M. A. (Allahabad)

PART VI

Theory of Distribution

(a) (i) Introduction Prayag Das Hajela,
(Allahabad)
(ii) Wages
(iii) Interest G. D. Thompson, M.A. (Allahabad) and Prayag Das Hajela, M.A. (Allahabad)

(b) (i) Rent
(ii) Profit J. K. Mehta, M.A. (Allahabad)

PART VII

Money and Foreign Exchange

Prayag Das Hajela,
(Allahabad)

PART VIII

Credit and Banking

Saraswati Prasad,
(Allahabad)

PART IX

International Trade (excluding the pages on I.M.F. which have been written by Prayag Das Hajela)

S.L. Parmar, M.A. (Allahabad)

PART X

Public Finance

(a) Principles of Public Finance S. K. Mukherji, M. A. (Allahabad)

(b) Public Revenue S. Gupta (Miss), M.A. (Allahabad)

(c) Public Expenditure

PREFACE

PART XI

Conditions of Economic Progress

- (a) The Process of Economic Evolution R. P. Bahadur, M. A., D. Phil. (Allahabad)
- (b) Economic Planning G. D. Karwal, M. A. (Punjab)

APPENDICES

- (a) Public Expenditure in India S. Gupta (Miss), M. A. (Allahabad)
- (b) Public Revenue in India S. Mukerji, M. A. (Allahabad)
- (c) Economic Planning in India G. D. Karwal, M. A. (Punjab)

I have no doubt the Staff Would endorse my wish to express our gratitude to Shri J. K. Mehta for the characteristically devoted manner in which he performed the heavy task of reading through the manuscripts, as he received them from the respective authors. I have knowledge of what that work has entailed upon his time, energy and patience. But for his steadfast labour this book may well not have materialised.

To Shri P. D. Hajela too are due our warmest thanks. He has had the task of seeing the book through the Press. All who know the conditions under which our Presses are functioning, will appreciate the services rendered by him in the production of the book. He also read through the proofs. I know it was no small achievement. The Index too is his contribution.

The authors hope the book will not prove a mere "crib" to pass an examination—important though that is for the student—nor even that it will serve as a text, but that the book will come to mean something more. If it helps to train the student-mind in the process of correct economic analysis, in the comprehensive appreciation of the subject, and enables him to arrive at reasonable and just conclusions, they will regard themselves as well-rewarded for the labour expended in the writing of it. For the rest, the authors wish the reader good understanding and clear grasp of a subject that is of such vital importance for the efficiency of society in general and the welfare of the under-privileged in particular.

S. K. Rudra

The University, Allahabad.
14th June, 1949.

PREFACE TO THE SECOND EDITION

The book has been thoroughly revised and a number of new chapters have been added. The major additions are on Factors of Production and Theory of Population by Mr. R. N. Bhargava, The Theory of Location by Mr. P. C. Jain, The Gold Standard, Economic Welfare and National Dividend by Mr. I. Z. Bhatti and Public Debt by Miss Gupta. The pages on The Balance of Payments Theory of Foreign Exchange by Mr. P. D. Hajela have been rewritten with radical alterations. The chapters on the Theory of Exchange by Mr. S. N. Agarwala have been thoroughly revised, as also those on the Conditions of Economic Progress by Dr. R. P. Bahadur. Minor changes have been made in almost all of the remaining chapters. The Appendix comprising chapters on Indian Public Finance and India's Economic Plans have been deleted altogether. *Fundamentals of Economics* has thus become a more comprehensive and useful book on the principles of economics.

The book was edited by the late Professor S. K. Rudra assisted by Mr. P. D. Hajela and myself. Professor Rudra's sudden death in June this year deprived this production of a wise and able enterpriser. The work of seeing the book through the press fell, as before, on the shoulders of Mr. P. D. Hajela. The book owes a debt of gratitude to his untiring efforts in this direction.

Economics Department,
2nd November 1951.

J. K. MEHTA

CONTENTS

CHAP.

PAGE

Part I—Scope, Methods and Significance of Economics

| | | | | |
|------|------------------------------------|-----|-----|----|
| I | Definition of Economics | ... | ... | 3 |
| II | Economics—Science or Art | ... | ... | 15 |
| III | Economics — Positive and Normative | ... | ... | 18 |
| IV | Economics and other Sciences | ... | ... | 22 |
| V | Law in Economics | ... | ... | 27 |
| VI | Methods of Economics | ... | ... | 32 |
| VII | Economic Statistics | ... | ... | 37 |
| VIII | The Significance of Economics | ... | ... | 50 |

Part II—Consumption

| | | | | |
|------|--------------------------------|-----|-----|----|
| IX | Wants | ... | ... | 55 |
| X | Utility | ... | ... | 60 |
| XI | Law of Consumption | ... | ... | 70 |
| XII | Demand | ... | ... | 79 |
| XIII | Consumer's Surplus | ... | ... | 90 |
| XIV | Planning of Family Expenditure | ... | ... | 97 |
| XV | The Standard of Living | ... | ... | 99 |

Part III—Production

| | | | | |
|-------|---|-----|-----|-----|
| XVI | Factors of Production | ... | ... | 105 |
| XVII | Land and Capital | ... | ... | 123 |
| XVIII | Theory of Production | ... | ... | 140 |
| XIX | Theory of Population | ... | ... | 159 |
| XX | Rationalization | ... | ... | 178 |
| XXI | Industrial Organisation | ... | ... | 184 |
| XXII | Theory of Location and Localization of Industry | ... | ... | 199 |

Part IV—Rural and Urban Problems

| | | | | |
|--------|---------------------------|-----|-----|-----|
| XXIII | Problems of Agriculture | ... | ... | 213 |
| XXIV | The Problems of Labour | ... | ... | 237 |
| XXV | Trade Unions | ... | ... | 245 |
| XXVI | Minimum Wage | ... | ... | 260 |
| XXVII | Social Security | ... | ... | 271 |
| XXVIII | Town Planning and Housing | ... | ... | 280 |
| XXIX | Transport | ... | ... | 291 |

Part V—Theory of Exchange

| | | | | |
|--------|---|-----|-----|-----|
| XXX | Basic Concepts in the Theory of Exchange | ... | ... | 341 |
| XXXI | General Statement of the Theory of Value in Perfect Competition | ... | ... | 358 |
| XXXII | Value in Perfect Competition Short Period Stationary State | ... | ... | 361 |
| XXXIII | Value in Perfect Competition Short Period Dynamic State | ... | ... | 363 |

| | | | |
|--|--|-----|-----|
| XXXIV | Value in Perfect Competition Long Period | ... | 367 |
| XXXV | Laws of Returns and Value | ... | 382 |
| XXXVI | Monopoly Value | ... | 384 |
| XXXVII | Value in Imperfect Competition | ... | 393 |
| XXXVIII | Inter-Related Value | ... | 396 |
| Part VI—Theory of Distribution | | | |
| XXXIX | Introduction | ... | 403 |
| XL | Interest | ... | 409 |
| XLI | Wages | ... | 424 |
| XLII | Rent | ... | 449 |
| XLIII | Profit | ... | 474 |
| Part VII—Money and Foreign Exchanges | | | |
| XLIV | Money | ... | 497 |
| XLV | Value of Money | ... | 505 |
| XLVI | Value of Money (<i>continued</i>) | ... | 515 |
| XLVII | Gold Standard | ... | 532 |
| XLVIII | Foreign Exchange | ... | 550 |
| Part VIII—Credit and Banking | | | |
| XLIX | Credit and Credit Instruments | ... | 577 |
| L | Banks—Their Functions and Classification | ... | 597 |
| LI | Exchange and International Banks | ... | 621 |
| Part IX—International Trade | | | |
| LII | Theory of International Trade | ... | 631 |
| LIII | Commercial Policy | ... | 648 |
| LIV | Exchange Control | ... | 670 |
| Part X—Public Finance | | | |
| LV | Principle of Public Finance | ... | 685 |
| LVI | Public Revenue | ... | 688 |
| LVII | Public Expenditure | ... | 703 |
| LVIII | Public Debt | ... | 711 |
| Part XI—Conditions of Economic Progress | | | |
| LIX | Earlier Forms of Productions | ... | 727 |
| LX | Capitalism | ... | 735 |
| LXI | Crisis in Capitalism | ... | 747 |
| LXII | Socialism | ... | 763 |
| LXIII | What is Welfare | ... | 775 |
| LXIV | Economic Planning | ... | 806 |

PART I
Scope, Methods and Significance of Economics

CHAPTER I

DEFINITION OF ECONOMICS

The Science of Economics has grown despite absence of any unanimity as to the very meaning of the term Economics. But this is natural enough and happens in case of all sciences. The topics taken up by any science grow and multiply, each generation adding something of its own and giving whatever chiselling it thinks is needed in them. At the same time efforts continue to be made to find what basic unity lies through all these topics and to assign limits within which they should be confined. This then is to be the function of a definition—to so describe a science that the various topics, laws or generalisations that have grown under its shadow can be harmoniously woven together and a definite limit is assigned within which the topics could expand or contract in course of their refinement through time.

Is Economics a science of wealth?

Now then, how to define the Economic Science? Let us for a moment take up the definition that economists before Marshall's time used to suggest. Economics, to them, was a science of wealth. And it was an economist's duty, they thought, that he should point out ways for increasing the wealth of the society. This bias in favour of wealth is evident in the very title which Adam Smith gave to his book on Economics, 'An Enquiry into the Nature and Causes of the Wealth of Nations.'

When "wealth" is interpreted broadly and in the sense of scarce means with versatility of application to the various wants of men, this definition of Economics needs no opposition. But this is not how the economists who suggested this definition interpreted wealth in their times. Wealth for them would mean tangible, visible and concrete goods of life—grain, tables and clothes. And no economist had any business to go beyond a study of these objects.

Some implications arise out of this narrow concept of wealth, which render this definition unacceptable to a scientific

mind. The first implication is that Economics begins to look like a science concerned with the meaner things of life only and hence incapable of contributing to the betterment of human lot. Those who would advise maximum production of grain, tables and clothes might only make men grossly materialistic and forgetful of the higher values of life.

The second implication which follows from this first one is that Economics would study only those people who are concerned with the production and consumption of material objects such as tables and clothes. And the rest would be left out as not being within the orbit of an economist's study. A saint in the jungles, for example, would be no concern of an economist.

But we know that neither is Economic Science a spur to materialism nor does it study people with a materialistic bias only. The law of equi-marginal utilities would help a saint to divide his time and resources between eating (none would dispute that even saints do eat; they would not be praying, if they did not), praying and meditation just as much as it helps the man, steeped in gross materialism, to divide his own time and resources between eating, drinking and buying clothes and tables. And he would be a crank economist who said that he would refuse to study the law as applied to the doings of the saint though he would not mind studying it in case of the worldly man. If the law of equi-marginal utilities is an economic law and applies to the saint as much as it does to the worldly man, both must necessarily come within the scope of Economic Science and hence Economics must be so defined as to include both of them for study.

This second implication, however, did not come to be realised by the economists except very late. But the first implication was realised not long after attacks began to be made on the economists and their lowly pursuits. Eminent men of letters and art described an economist as one who was injecting pig-psychology in human minds. Ruskin came out with an open declaration saying that there was no wealth but only life. And thus Economic Science began to be derided and looked down upon.

Improvement by Marshall

Marshall was the first economist to set at rest this avalanche of criticism that men like Ruskin and Carlyle had levelled against Economics. He emphasised that wealth was no end of Economic Science; the end was instead the eventual betterment of human lot. And he framed his definition accordingly. "Economics" he said "is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well-being".

Apart from the fact that it lends a dignity to Economic Science, it does not show much improvement upon the earlier definition. And then it is vague and limits the scope of Economics almost to the same area which the earlier definition implied. What does "ordinary business of life" mean? Will not such a phrase confine the study of the science to only those activities that are "ordinarily" performed in the course of our daily life? Surely that would limit narrowly the scope of our enquiry.

This, however, is on the score of inaccuracy in framing a proper language. But even when language is not cared for and the same sense is accepted which Marshall wanted to convey through this language, the definition continues to remain unacceptable. For then Economics would study only men living in a society and perhaps saints and men like Robinson Crusoe would be left out of the scope of Economics. For Marshall says, "economists study the actions of individuals, but study them in relation to social rather than individual life, and therefore concern themselves but little with personal peculiarities of temper and character". And we have seen above that this means cutting short the applicability of the law of substitution itself, the most fundamental law of Economic Science. A scientist should concern himself with extending the application of his laws rather than in limiting it.

The same weakness—that of limiting the scope of Economics—is evident in the concluding words of the sentence also. Human action as "connected with the attainment and with use of the material requisites of well-being" alone is to be

studied. Human action as connected with the non-material means of welfare is not to be studied. The enjoying of a musical conference or a cinema show has non-material implications, so have teaching and singing. Therefore, actions pertaining to these would not be an economist's concern. Only those would be which are concerned with the material requisites of well-being, like food, tables and clothes. This then turns out to be the scope of Economics according to Marshall—that only actions of men living in some society would be studied and then, not all the actions of such men but only those selected ones which are connected with the material things of life. A teacher might live in a society but since his teaching is non-material it would fall outside the scope of Economics. This we know is completely wrong. In so far as teaching as a service can be bought and sold in an open market in accordance with the laws of supply and demand, it has, inevitably, an economic aspect also which an economist cannot afford to leave out of consideration. In the text of his book Marshall, however, does not strictly adhere to these implications of his formal definition. For, he does consider cases of buying and selling of services that do not immediately bring into being any material goods.

Pigou's views

Prof. Pigou defines Economics as a study of economic welfare, economic welfare being described as "that part of welfare which can be brought directly or indirectly into relation with the measuring rod of money". This, however, is not different from Marshall's except for the change that instead of saying that Economics studies human actions in relation to material means of welfare, he says that Economics studies human actions in relation to material or economic welfare itself. It might however be noted here that although "material means of welfare" is a meaningful phrase, the words material or "economic welfare" do not convey much meaning. We may divide the means between material or non-material but we cannot divide human welfare into any such categories.

But even if we suppose it to be something meaningful for a time, the definition would not be acceptable. For it fails to take into account an isolated individual like a Crusoe or a jungle

saint. There is no money (at least of the type which Pigou has in mind) in a Crusoe economy. What part of Crusoe's welfare would be economic welfare then? Or shall we say that since there is no such part of welfare in his case as can be "brought directly or indirectly into relation with the measuring rod of money" Economics would have nothing to do with such an individual?

Implications of the above definitions

✓ All these definitions that we have considered above have failed to describe correctly the existing subject matter of Economic Science. They have rather implied that we should cut down the wide applicability of some of the most fundamental of economic laws—such as those of equi-marginal utility in consumption and supply and demand in the theory of value. And then they seem to have based themselves on the concept of Economics being a social rather than a human science. A social science is generally understood to be a science that studies a man only as part of a society. And hence one who lives in isolation would not be studied at all under such a science. A human science, however, embraces a wider field. It simply means a science that studies a human being. And whether that human being is or is not a part of some society does not matter at all. A Crusoe or a saint would be as much within the scope of such a science as any man living in society somewhere. So a human science can study both social and the non-social beings, whereas a social science can study a social being only. Thus human science has a wider scope or covers a wider field of study than a social science does. Since the fundamental laws of Economics apply to a non-social being as much as they do to a social one, Economics should study both of them. And this it can do only when we regard it as a human and not as a social science

Yet another impression that we get from the definitions considered above is that Economics studies a certain group of activities rather than a certain aspect of each activity. And that group is the one that contains activities which are connected with the production and consumption of some tangible and concrete goods of life called "wealth". Or as Marshall puts it, which are "connected with the attainment and with the use

of the material requisites of well-being." Prof. Robbins has called such definitions "classificatory". To divide activities between economic and non-economic is completely unscientific and illogical. Does not a man who produces tables make mathematical calculations regarding the amount of wood that he would use, the number of hours that he would spend and the price that he would charge for his article? And if that is so, is not there a mathematical aspect also to the activity of the producer of tables? If there is, how can that activity be considered entirely economic? And if it cannot be considered entirely economic but only partly economic, would we not be right in saying that Economics studies only a part or an aspect of an activity rather than the entire of it? An economist should not appropriate an entire activity for himself when only a part of that activity can legitimately belong to him. Economics should, therefore, be so defined as to make it cover the activities of all human beings, whether social or non-social, and in such a manner that only a certain aspect or part of each activity falls under its scope and not the entire activities of any special group or class.

Robbins' definition

Prof. Robbins, conscious of all such implications, defines Economics as a "science which studies human behaviour as a relationship between ends and scarce means which have alternative uses." As is evident, Economics becomes a human science here rather than a social science and its scope is widened. Economics studies "human behaviour" wherever it be or whomsoever it might concern. If it concerns a man living in a society, Economics would study it no doubt but if it does not relate to any such man, even then Economics would study it. And yet the entire of the human behaviour would not be an economist's concern; it is only an aspect of it which will be. But what is that aspect? That which appears as concerned with the allocation of scarce means with alternative uses to the various wants of men that have caused that behaviour. Suppose a man has fifty rupees to spend on three commodities A, B and C. He knows it well that he cannot purchase infinite amounts of all these three commodities, for the money (or the resource) that he has to spend on these commodities is limited or finite. How much should he purchase of them then? He might pur-

chase a greater amount of *A*, a less amount of *B* and a still less amount of *C*. Or he might purchase a greater amount of *B* and smaller amounts of *A* and *C*. Or he might purchase equal amounts of all these three commodities. Suppose he has decided what amounts to purchase of these various commodities out of the fifty rupees at his disposal and it turns out in the end that he would spend thirty rupees on *A*, twelve rupees on *B* and the remaining eight rupees on *C*. Then in so far as we look upon his action or behaviour of purchasing these commodities in the market, concentrating only upon the "why" and "how" of his decision to spend or allocate fifty rupees to the satisfaction of the wants for *A*, *B*, and *C*, we are studying him under the science of Economics. And his behaviour as concerned with making such a decision (i.e. how much he would purchase of each commodity and for what amount out of his fifty rupees) is said to possess an economic aspect.

Wherever the means at the disposal of a man are limited and he allocates them to the satisfaction of his various wants, the economic aspect comes in evidence. There is an economic aspect to the behaviour of a man who while standing at crossroads decides to follow one road rather than another to reach his destination. So is there an economic aspect to the behaviour of a man who decides what amount of time he should devote to reading and eating out of a limited number of hours at his disposal. The economic problem thus arises when we choose to spend varying amounts of our limited resources on the satisfaction of our various wants. The economic problem arises out of making a choice. Where choices are not open to men, the economic problem vanishes and we are left without any such thing as the Economic Science.

But choices result out of the fact that we may use our resources in satisfying a number of wants rather than a single want only. If your resources can be used in satisfying some particular want only and you cannot use them to satisfy some other wants, then the question of choice does not arise at all. For you will inevitably have to spend those resources on the want for which they are meant. It is only when these resources are capable of many uses at the same time that the question arises which use they should be put to and which not. And here

then it is that the necessity for making a choice comes in and here then arises the economic problem also. Hence in order that the economic problem should arise the resources at your disposal should have alternative uses.

But though this is a necessary condition for enabling you to make a choice, this is not a sufficient condition in itself. The resources which are capable of alternative uses must also be scarce in relation to the demand for them. If a man has wants and the resources or means at his disposal for satisfying those wants are not scarce i.e. they are in abundance, then he need not bother his head to decide what amount of them should be spent in satisfying each want, for the resources are in so great a supply that all wants would automatically be fully satisfied. It is only when the resources are limited or scarce that he has to be cautious that he does not spend more than a certain amount on a certain want or else some other want or wants will have to go unsatisfied in the end. And so he has to make a choice as to how much satisfaction he will have from one want and how much from another or which is the same thing, decide to what extent he would satisfy his various wants out of his limited resources. In order that there might arise the necessity for making a choice it is necessary, therefore, not only that the resources should be capable of alternative uses but that they should be scarce also in relation to the demand for them. And it ever happens that the resources of men fall short of the demand, for the wants of men are a limitless phenomenon. And so the economic problem is ever present. It would vanish if we could so control our wants that instead of their remaining infinite in number they boiled down to a small finite number only, and the supply of resources outstripped the demand for them.

The end of all choices

What happens, you would ask, to be the end of a human behaviour while making a choice? For when we take more of *A* and less of *B* and *C*, we must have some reason why we make a choice for this combination and not for another. And the reason is only that this particular combination fulfils our eventual aim more than any other. But what after all is the aim which we want to be fulfilled? The aim, obviously enough,

is the maximisation of satisfaction to ourselves from the scarce means at our disposal. The fact that we choose to satisfy some wants and not to satisfy others implies only this much that the satisfaction of the former wants gives us greater utility than the satisfaction of the latter ones. Had the latter wants given us greater total satisfaction or utility we would have tried to satisfy them rather than the former ones.

Now since Economics is a science of choice and the end of all choices is maximisation of satisfaction, Economics studies human behaviour as concerned with the making of choices in such a manner that maximum satisfaction is achieved out of them in the end. Such an understanding of Economics is consistent with the fundamental laws that have grown under the shadow of this science. The law of equi-marginal utilities, for example, can be proved to be an economic law according to this definition just as much as the laws of supply and demand in the theory of value can be. And there is no need to cut short the scope of their applicability.

A question now arises whether maximum satisfaction which happens to be the end of human behaviour can be more fully achieved when a large number of wants is satisfied or when the wants are cut down to the minimum. Western economists, though they do not often openly say it, are of opinion that maximum satisfaction is possible only when the greatest possible number of wants is satisfied out of the given resources. And this has inevitably led men in the West to multiply their wants and make life more and more complex.

The objective of Economic Science: minimisation of wants

Mr. J. K. Mehta has rightly challenged this opinion for instead of its adding to the sum total of human happiness it subtracts from it a good deal. In fact he thinks that maximisation of satisfaction is rather completely inconsistent with the maximisation of human wants. A want is a painful experience. This is evident from the fact that we wish to satisfy it and be rid of it as soon as possible. We would not have bothered to remove or satisfy it had it not been painful. So the removal of a want means removal of pain and procurement of pleasure. And this pleasure is the same thing as satisfaction or utility. If one

wants to get maximum utility or pleasure or satisfaction, one should see to it that all pain is removed and no fresh pain is experienced in future. At least this is the ideal for any one who wants to achieve maximum satisfaction out of his choices.

The absolute removal of entire pain seems impossible on the surface. But it is really not as impossible. This, of course, is true that for a man who has a very large number of wants to satisfy and, therefore a large amount of pain to remove, the task of removing all pain becomes more difficult than for one who has less wants and hence a smaller amount of pain to be rid of. But this does not imply that complete removal of pain is necessarily impossible in each case. It rather implies a more hopeful state of affairs that it becomes increasingly possible to remove all pain provided the wants and hence the pains corresponding to them decrease in their number and amount. The less the wants that we have, the less our pain and hence the easier the task of removing that pain and achieving maximum satisfaction. If, therefore, maximum satisfaction is the object behind the behaviour of a human being while he makes his choices for satisfying his wants, it would be more fully achieved if his wants are few rather than if they are many. And thus we are led to the objective of controlling or simplifying wants for purposes of attaining maximum satisfaction through human behaviour. Now since Economics studies human behaviour as concerned with the maximisation of satisfaction and since maximisation of satisfaction is better achieved when the wants are at their minimum rather than when they are not, Economics studies human behaviour as concerned with the minimisation or the simplification of human wants. And this minimisation of wants can be rightly regarded as the ultimate objective of the science of Economics.

Except for this interpretation of the way maximum satisfaction can be achieved, Prof. Robbins' definition stands unimpeachable in its substance.

Criticisms against Robbins

The two criticisms that are frequently thrown against Robbins' definition are, first, that he makes Economics a positive and non-ethical science and, secondly, that he so defines

Economics as to make it easily look like Politics, History or any other science. For is not, the critics argue, Politics concerned with the allocation of scarce means to the various wants of men and their government? And is not, they continue, any science for the matter of that concerned with such allocations? Such questions are indicative of some confusion in the minds of the critics. True it is that the human behaviour of the Prime Minister of a country, whom any politician might be tempted to claim as his entire property, would be inevitably concerned with the allocation of his resources to the various wants that he experiences. But that does not mean that the aspect of his behaviour that would thus arise would become political rather than economic. And just so long as this cannot be, Politics and Economics cannot look the same under the definition that we have justified above. Politics would study a different aspect of human behaviour, perhaps, that aspect which is concerned with the enjoyment of rights from and the performance of duties towards the state of which the human being in question is a citizen. And when in course of such an enjoyment or obligation choice is to be exercised, we would say that Economics and Politics are walking hand in hand rather than that they are merging their identities into each other and have become one for purposes of any scientific study. As with Politics so with any other science that makes a study of human behaviour. In each action of a man, there is Economics, Ethics and Religion but not all of these sciences become one for this reason. Nor should they all look identical with Economics only because each action in which they are contained implied the making of some choice and hence is possessed of an economic aspect.

The charge of Economics becoming a positive science under Robbinsian definition would be examined later. But it might be roughly stated here that this charge can be proved false if we give a logical interpretation to this definition. Prof. Robbins is not very precise on this question. And yet in so far as one can read his meaning he seems to be of the opinion that Economics is and should be a positive science only. We will see for ourselves when we take up this question later whether or not Economics is normative in character. Meanwhile on the basis of the arguments that cropped up in course of the search for a proper definition of our science, we persuade our-

selves to believe that Economics is a science which studies human behaviour as concerned with the making of choices in such a manner that the number of wants is kept down to a minimum and the maximum possible satisfaction is thus achieved for the human being in question.

be in accordance with his norm of honesty and would thus become subject of a normative science also. But if this ideal of honesty is somebody else's choice for him then he might not follow it thinking that dishonesty perhaps would be a better norm to serve his self-interest. And all his actions would thus become different from that which they should be i.e., they would be dishonest rather than honest. In such a case, it is said then, that his actions would not comprise the subject matter for a normative science.

This interpretation of a normative science, however, is very narrow. And yet we shall presently see that even according to this narrow interpretation of the phrase "normative science" Economics is normative in character. We call this interpretation narrow because it seems to assume something which is not necessarily implied in the meaning of the phrase 'normative'. Normative means according to a norm and there is nothing in this meaning to indicate that the norm should be necessarily the one chosen by some outside authority. But even if this qualification is added from our side, in so far as Economics studies human behaviour in relation to the norm or ideal of the minimisation of wants, chosen for man by the outside authority of an economist, Economics is a normative science also.

A further narrowness in interpretation comes in evidence when it is said that the norm in relation to which human behaviour is to be studied (by a normative science) must be chosen by only a particular outside authority viz., the man of Ethics. Normative science thus turns out to be a science which studies human behaviour in relation to some ethical principles. It need hardly be said that this interpretation puts a further unnecessary qualification on the meaning of the phrase "normative science" and makes it look almost identical with Ethics. If "normative science" and Ethics are the same thing, why at all was this phrase coined then? And is Ethics only a normative science through and through? Is it not a positive science also in the sense that it has first to study human actions as they are in relation to its norm and then point out how they should really be? And this brings us to yet another interesting point that even that which appears to be a completely normative science is partly positive also and only partly normative.

However, now, even if this very narrow and arbitrary interpretation of a normative science is accepted as correct, Economics turns out to be a normative science. For, the norm of the minimisation of wants is the one with which no man of ethics or moral philosophy or religion will have any single dispute whatever. Understanding by Ethics, morality or Religion the same which they usually mean, the ideal of Economic Science, one would say, is an essentially ethical or moral or religious ideal.

The proper interpretation

But all these interpretations unacceptably limit the scope of a normative science. And we should not, therefore, understand by it anything other than this that it studies human behaviour as it should be according to any norm whatever on earth. And in this sense not only Economics, but all sciences that study man or matter are normative in character. A piece of rock which forms part of a physicist's study happens to be so because Nature, which gave it birth, had thought that it should be of this norm. And in so far as the science of Physics studies this piece, it is both a positive as well as a normative science. As with this science so with the human sciences also. Whenever a human science studies some existing human behaviour, that human behaviour is necessarily the one which the man in question had thought he should have done. And thus any science studying a human behaviour becomes normative also in character.

The positive and normative aspects of Economics

But this leads to a funny state of affairs. How can the same science be positive and normative both at the same time? A normative science is the one which is wholly normative and there is no element of the other variety in it. So also is a science positive only when it is completely lacking in the normative element. If both the elements exist side by side i.e., a science is partly normative and partly positive, then this alone gives sense that we say that there are two aspects positive and normative to the same science rather than that the positive and normative sciences have been rolled into one. Two sciences cannot make up the same science but two aspects can.

And so instead of saying that Economics is both a positive and normative science we say that the science of Economics has both the positive and normative aspects. The positive aspect is concerned with studying the human behaviour as it indicates itself to an economist and the normative aspect is concerned with where that behaviour stands in relation to the object which the man concerned wanted to achieve. This latter study is called the study of equilibrium. The study of equilibrium is a suggestion to a man that though he thinks that his behaviour as it is, is the same as it should be, it may really not be so and he should make such and such adjustments to achieve his ultimate objective. Sometimes the immediate standards of conduct which persuade man to think that he is doing what he really should, become unhelpful for purposes of achieving his final norm. And then the study of equilibrium brings him on the right path. Prof. Robbins is not quite correct when he says that "equilibrium is just equilibrium" and "there is no penumbra of approbation around" it. Equilibrium itself implies, in some sense, a certain ideal state of affairs and is a strong persuasion to human beings to adjust their behaviour to it or else their final object, standard norm would be slipping off from their hands, leaving them groping on the wrong tracks. And so the theory of equilibrium, concerned with pointing out to the people the right path for reaching their destination, has beyond any question or doubt, a definitely normative bearing about it and must inevitably be regarded as constituting the normative aspect of the Economic Science.

CHAPTER IV

ECONOMICS AND OTHER SCIENCES

Wherever there is society, the social aspect of a man's life comes to play an important role in the determination of his choices. And hence all sciences concerned with such an aspect get to be thickly related to the science of choice. Economics and social sciences turn out to be relatives of each other.

Economics and Politics

Let us imagine a society where the government ruling over the people is a weak one and cannot protect them. Naturally enough, if the people are to live they will have to make arrangements for self-defence. And then the want or choice for the procurement of guns and swords would have to have a priority over, probably, all other wants except that of food. Education might be neglected unless it be that the resources at the disposal of men are vast enough to satisfy all the wants of food, defence, clothing and education at the same time. If education is neglected the mental capacities of the people to decide between the right and the wrong go down. And this has a further impact on their scale of choices. It is evident, therefore, that a certain political set-up in a society will have so many direct and indirect repercussions on the economic element of men's decisions i.e., on the making of their choices, and consequently also on the actions that would follow from them. Political Science, therefore, has a relation to Economics in so far as elements of the former influence those of the latter. And then the choices also exert a great influence on the political set-up of a society. If people choose to spend more time and energy on cultivating goodness rather than on producing bombs, then they might also like to have only a non-aggressive non-diplomatic government in place of one which is complex and full of political intrigues. The achievement of the objective of the minimisation of wants might shift on the studies of Political Science to forms of Government, perhaps, entirely different from those that are in evidence these days. And then we would say that Economics has changed the very data or

institutions on which Political Science is to build itself. In a like manner can Political Science change the data for economic studies by suggesting forms of government which would imply a different scale of choices from the one obtaining at present.

Economics and History

In so far as the past of men has a bearing on the determination of their choices, History is evidently closely related to the science of Economics. And then there often arises the need of historical evidences to prove the validity of certain economic laws. So great was thought to be the importance of History in Economics, that some economists in Germany went to the extent of maintaining that Economics without reference to History might easily become a meaningless science. We may not agree with this opinion, but we would not dispute that History and Economics are closely related to each other, History changing the data of Economics and Economics also changing the data on which History builds its own structure. If men decide to minimise the wants throughout the world, human history would leap on to a different channel altogether. And we may not have anything to hear of wars and conquests for a considerably long time to come. If men decide to allow themselves to be gripped by the past jealousies of nations, their choices or economic decisions might never fall on the erection of temples, mosques or churches as much as on the setting up of armament factories for a war.

The nature of the relationship

But the reactions of Economics on History and Political Science and the reactions of History and Political Science on Economics do not change the scope of these sciences. At least of Economics we can certainly say (the other sciences do not deeply concern us here) that even though when the institutions or governments which Political Science studies change, the choices of men also change to a degree, the general body of laws or conclusions which make up the Economic Science is affected or changed not a bit for that reason. Nor is that body affected or changed when the facts are pointing towards peace rather than war and men have decided to be sober and

sympathetic to each other. Whatever be our choices—whether for the construction of armament factories and the production of bombs, guns and cannons or for erecting churches, mosques and temples and turning out books on religion, ethics or moral philosophy, the resources to be spent will continue to be arranged in accordance with the principle of equi-marginal utilities. And the same law of supply and demand will determine the value of cannons and bombs which the pricing or valuation of books will inevitably demand for its own purposes. So Economics, History and the Political Science are related to each other not in the sense that the influence of one makes the rest extend or contract their respective scopes but in the sense that when data pertaining to one change, the data pertaining to the rest are also affected. When data change fresh theories or conclusions might crop up and to this extent Economic Science would be richer also but that would not imply that Economics has become any wider science for that reason. The field of Economics would remain constant in area, though the crops in that field might become intense in growth.

Economics and Psychology

The relation of Economics to Psychology is the same as that of Mathematics to axioms. The base of any choice is the utility which the satisfaction of that choice will bring. And utility is a psychological phenomenon. So that in Economics we have to assume that each man has a psychological craving for utility or satisfaction just as in Mathematics we assume that if equals are added to or subtracted from equals, the result would be equal. If this axiom turns out to be incorrect, the entire literature on Mathematics will become a piece of trash. So also if it is proved that we do not have a craving for satisfaction of our choice, the whole structure of Economic Science will come down to the ground. Psychological assumptions are the base on which Economics stands.

Economics and the physical sciences

The relation of Economics to sciences like Physics or Chemistry is essentially of the same type as that of Economics to the

social sciences. Only that, it is not as evident in this case as it is in the latter one. The studies of Physics result in inventions and change the facts of human existence. So do the studies in Chemistry. The cobbler gets replaced by the shoe factories. And this new data arise for the Economic Science to study and draw conclusions from. But whereas the impact of History and Political Science on the facts of human existence and consequently on the data of Economics is direct and more evident, the impact of the physical sciences is indirect and less evident. The impact of the economic data or choices on the physical sciences, however, is more direct. When men decided to produce weapons for winning a war, the science of Physics, to take one example, immediately shifted its attention to the study of explosives. The atomic bomb is a unique example of the impact of men's choices on the studies of a physical science.

Economics and Mathematics

The relation of Economics to Mathematics would be clearer when a discussion of the analysis of economic data and the drawing of conclusions therefrom is taken up in the succeeding chapter. Meanwhile we may say that in so far as all choices involve a comparison of utility and all comparison involves valuation, and all valuation implies mathematical calculations, economic decisions would be impossible without the aid of Mathematics. And hence Economics has an indispensable relationship with the science of Mathematics. This, as we see, is apart from the fact that Mathematics assists, like Logic, in the collection of facts, and their analysis and in the drawing of conclusions therefrom.

Economics and Ethics

The relationship between Economics and Ethics is so close, despite the attitude of western economists on this question, that they can easily resemble each other. The general theorising in Ethics is different from that in Economics. But in so far as Ethics has the aim of persuading men to do right things, Economics and Ethics become almost identical. Does not an economist say that we should keep our wants to the minimum? And is not this a persuasion to do the right thing? Western econo-

mists might come forward and say "How do you know that this objective of minimising the wants is the right thing for men to do?" We would put them a counter question : "How do you know that this is not the right thing to do ?" Even when Ethics lays down that honesty is the best policy for men in all times, a question as to the why of this statement can easily arise. But there is no mathematical proof to show that honesty is the right thing. And we have only to take it for granted because each generation, whether it has practised it or not, has called it the right thing. So also with our own statement that men should tend to live a simple life (and this is what minimisation of wants implies). We take it that it is a right thing to live a simple life because each generation has called it a right thing. In fact if we consult any man of ethics or religion, he will at once say that the object of Economics is nothing different from an ethical or religious principle. And in the sense that both Economics and Ethics exhort men to follow this principle, they can easily be regarded as identical with each other. What else now can be a proof of the deep and intense relationship between Ethics and the Economic Science ?

CHAPTER V

LAWS IN ECONOMICS

A law, in the context of any science, is statement of a causal relationship between two sets of phenomena. If in the course of an analysis of the "why" of a phenomenon *B*, a scientist happens to arrive at a phenomenon *A*, then his statement that if *A* happens, *B* too would, assumes the form of a scientific law. It is, for example, a very obvious experience that we do not consume infinite quantities of any commodity. If now as a result of our enquiry into the "why" of this phenomenon of finite consumption we come to the phenomenon of diminishing satisfaction, then this statement that if diminishing satisfaction obtains, consumption in the same stretch of time is sure to be finite takes the form of a scientific law. Also, if while analysing a certain phenomenon *A* we arrive at a certain phenomenon *B* which follows *A* as effect follows cause, then too the statement that if *A* happens, *B* would, assumes the form of a scientific law. This, however, is the study of a cause leading up to the discovery of the effect, whereas the former example is the study of an effect leading up to the cause. But whatever the way we proceed or study, so long as it is possible to connect two phenomena by a thread of causal relationship i.e., if one of them happens, then the other, too, must, just so long we can make statements of a law in a science.

In economic law

An economic law establishes causal relationship between sets of such phenomena as are connected with the problem of the formulation and the satisfaction of the human choices. The statement, for example, that if price rises, other things remaining the same, demand would go down is an economic law. It connects two phenomena—one pertaining to the rise in price and the other pertaining to the decrease in demand both of which have an impact upon the scale of choices of a human being. And then the connection thus stated is also a causal connection, one phenomenon being the cause of the other.

The establishment of any such causal relationship, however, is a difficult task. And unless one has been logical in his analysis one may arrive at a relationship which though seemingly causal is not causal in substance. Let us take an example. If more employment is in evidence in a country at a time when the government happens to spend ample money on public works and its own industries, it would not be a logical law to state that if more public works are undertaken and more industries nationalised employment will inevitably increase. The causes of employment might have also been increase in private expenditure of businessmen, consumers and foreigners. And if such an expenditure goes down, despite the government's own high expenditure on its public works and industries, the employment may not increase. Unless we qualify this statement by attaching some more assumptions or conditions to it, it cannot be regarded as a scientific law.

The purpose of a law

Now, the existence of laws in any science should have a purpose behind it or men would not bother their heads to find them out. This purpose, to be brief, is to help men to predict and to adjust themselves to what might or should happen. For example, the law that if maximum monopoly revenue is to be achieved then marginal revenue and the marginal cost must be equal can assist a monopolist to determine the output that would maximise his net revenue. If the law were not known to him he would not be able to decide what amount, under certain conditions of demand, he should produce to get maximum profit. Nor would he know where he has gone wrong and why, and how he should control his production to achieve the highest monopoly revenue for himself. But a knowledge of the law would easily help him to forecast in advance, what, if such and such happens to be the demand curve at a future date, he should produce and how he should control his production to adjust himself to the conditions indicated by that demand curve in order that his monopoly revenue might be maximum.

The scope of a law

Evidently enough, the greater the scope of a law, the more will be the people to benefit by it. When we say that if Lucknow

is nearer to Allahabad than Delhi is, then the rail transportation charges for a quantity of Allahabad wheat for Lucknow are smaller than they are for Delhi, we are propounding a causal relationship which is narrow, and would not apply to limits outside the area set by Delhi, Lucknow and Allahabad. But when we say that if a consumer wants maximum utility out of a given income and taste, he should so adjust it that the marginal utilities from the last unit of expenditure on the various items of consumption are equal, we are stating a law whose scope can spread from one corner of the earth to another and in all times when people have the object of maximising their satisfaction.

But the wider is the scope of a law, the more abstract does it become. The law of consumption, as we have just seen, is difficult to grasp. But the law of the behaviour of transportation charges for wheat between Delhi, Lucknow and Allahabad is so easy and concrete that without the least exertion of mind we can get at the meaning that it wants to convey. From the point of view of practice the latter law, though narrow in scope, has greater attractions than the former one. The wider the scope of a law, the more abstract it tends to become and also less catching for purposes of practice.

The universality of scientific laws

Had practice alone been the consideration, we could have easily laid it down that laws having more concrete shape would be better than those having vagueness in them. But there is yet another consideration which is important however, and that is that the laws in a science should be as little conditional or hypothetical as possible. And this implies absence of a large number of conditions from which a law is derived. To take our own example, the wheat transportation law says nothing of what might happen if rice or cotton or coal were the articles under consideration. Nor does it say what behaviour would be in evidence when the means of transportation changes from locomotives to the automobiles or ships or the air planes. It is thus highly conditional and would apply only where wheat and the railway transport and the three cities with respect to which it has been propounded are taken into account. But the law of consumption would apply wherever there is a certain income and a given taste for the articles to be bought out of

it. And whether it be wheat or cotton, coal or rice, or it be *W* or *X* or *Y* who consumes it, the law is bound to apply under any skies crowding over this globe. Thus we see that when the scope of a law becomes wider, it becomes vague no doubt but it also gets less and less conditional at the same time, making possible thereby its own applicability to a greater variety of things and people. If Economics is to have maximum permanence and universality as a science, its laws must embrace as large a variety of situations as possible.

THE NATURE OF ECONOMIC LAWS

The laws of Economics are said to be, generally, less exact than the laws of the physical sciences. We shall presently see whether this is really true or not. But we can certainly say that it is extremely difficult to test the exactness of the economic laws in the laboratory of real human life. We cannot, for example, prove whether when a consumer has given taste and income, maximum utility to him would come only when he arranges his expenditure in accordance with the law of equi-marginal utilities. His income may change and his taste too may. And then, what surety is there that when the marginal utility of any item of expenditure turns out to be slightly greater than the rest he can reduce its purchase by such a small amount that its marginal utility becomes ultimately equal to that of the other items? This could be possible if the articles were to be bought in small units only. But sometimes cabbages might be bought alongside with camels and though a cabbage or two might cause only slight variations in marginal utility, a camel or two would cause very vast variations, and might render adjustment of perfect equality of marginal utilities an extremely difficult task for the poor consumer.

Marshall's views

Marshall's statement that the laws of Economics are to be compared with the laws of the tides, rather than with the simple and exact law of gravitation can be interpreted to mean nothing beyond this that whereas the law of gravitation can be proved to be exact in practice the law of tides cannot be and hence economic laws should be of the variety of the law of tides rather than of the law of gravitation. But it is one thing to say that the

laws of Economics, owing to the difficulty of experimentation, cannot be proved to be exactly applicable and another thing to say that they are necessarily inexact or less exact than the laws of the physical sciences.

All laws conditional though exact

In fact if the analysis which has led to the discovery of any law has been perfectly logical we would be completely justified in saying that, under the assumptions that are attached to it the law is necessarily exact and shall apply whenever and wherever those assumptions obtain in real life. And in this sense there is no difference between the law of gravitation on the one side and the laws of tides and of Economics on the other. Both assume a certain set of conditions, the law of gravitation assuming that no forces are working to counteract the force of gravity and the law of equi-marginal utilities assuming that the consumer has the same income and taste while making his choices at any given period of time. And both would apply in real life just so long as the conditions attached to them obtained. It is a different matter, however, that whereas in the case of the law of gravitation the conditions can be created for purposes of actual experiment, in the case of the economic laws they cannot easily be created. But we cannot for that reason call economic laws inexact. The exactness or inexactness of any law depends upon the mathematical precision with which it follows from its assumptions. If from the assumptions of maximum utility and some given tastes and income for a consumer, we can logically or mathematically reason out that he must arrange his expenditure in accordance with the law of equi-marginal utilities, then whether this law can be tested by experiment or not, it would continue to remain as much of an exact law in itself as any of the laws of the physical sciences.

We can, therefore, say that apart from the fact that the economic laws cannot easily be experimented, there is no difference whatever, between the nature of the economic laws and that of the laws of the physical sciences. Both assume a certain set of conditions for operation (and this makes no difference to the nature of the laws that some are based on a larger number of assumptions whereas others are based on a smaller number only) and in so far as they follow logically or mathematically from their assumptions they are both equally exact or accurate also in themselves.

CHAPTER VI

METHODS OF ECONOMICS

Induction and deduction

The methods employed in Economics are the same as those employed elsewhere—the old familiar methods of inductive and deductive reasoning. Induction or the method of inductive reasoning is, what may be described as, the technique of a practical approach to the problems of a science. Herein we are concerned with associating a generalisation with practice in such a manner that the disparity between theory and practice is brought down to the minimum. We can either formulate a law after having studied a large number of similar situations as they obtain in real life or we verify an already established law with reference to the existing situations. The former way is known as the statistical method of approach and the latter as experimentation. Inductive reasoning, therefore, can take the form of either or both of these approaches, the statistical method and the method of experimentation, the first being concerned with extracting laws out of a large number of facts collected from real life and the second with testing whether the laws derived through abstract reasoning rightly describe the reality that happens to exist around us.

The inductive reasoning experimentation

Inductive reasoning is thus an attempt to connect generalisations with reality. The statement that induction proceeds from the particular to general is, however, a narrow statement. For then induction in a way would become identical with the statistical approach only which as we have seen is only one of the forms which induction can take.

Experimentation in Economics, as has been pointed out, is an extremely difficult task. If the situations in the midst of which we have to work out the experiment were controllable, all would be well. And in this respect the physical sciences unquestionably stand on a favourable ground. But

for an economist to find out whether an increase in expenditure on public works would augment general employment in the country it would yet be long before he succeeds. For, he cannot control the expenditure of private businessmen and industrialists. Nor can he order the countries abroad to keep their respective expenses and techniques of production constant so that there is no change in the quantity and the quality of goods that are flowing in from outside. And all these are factors that have definite reactions on the general employment of a country.

But that does not imply that an economist should try no experiments whatever. In fact the greater the knowledge of the economist on the problems of public works and unemployment and the greater the number of specific cases (where public works and employment are related to each other) to be examined, the greater are the chances for the success of an economist's experiment in this particular field of the effects of public works on the general employment of the country. And as with this, so also with the other problems of Economics where experiment is wanted.

The statistical method

The suggestion for a statistical approach also comes because of the difficulties of experimentation. If testing is difficult, let generalisations be based on facts rather than abstraction so that the very need for testing is obviated altogether. This opinion has been held by a number of economists in the past and even today there are some who hold firmly to this opinion. That the statistical method has its own place of importance in a science would not be disputed. But to make it a substitute for deduction or abstract mathematical analysis is, to say the least, to betray complete lack of understanding of the very nature of scientific generalisations.

The advantages of the statistical method are evident. It makes it possible that economic generalisations be based on the facts so that there may be the least vagueness or unfeasibility about them. And then it might assist in correcting the abstract theories of the past which grew because

experiment was not possible, but now when statistical data had been collected and generalised the gap between the real and the unreal could be easily discovered.

In some cases, one might say, we cannot but apply the statistical method of analysis. These are specially those where some detailed information is wanted. For example, there is the question "What would be the exact consequences of a high tax on tea or coffee on the economic conditions of the people of India?" Unless we know facts relating to the elasticity of demand for these articles, the ease with which one of them can be substituted for another by their respective growers and a variety of other connected facts, we cannot give straight answer to this question.

But the collection of facts is no easy a task. For reality, though obvious is complex too. And to disentangle out of it that which concerns an economist might require an extremely intelligent and a well-informed mind. It requires a man who knows perfectly well the difference between the economic and the non-economic and has a thorough knowledge of the theoretical apparatus of the Economic Science. He must, for example, know the general theory of the elasticity of demand, of incidence of taxation and so on, before he can be expected to make a proper collection and study of the data required to find out the precise effects of a tax on tea or coffee on a people.

This proves to us that factual study is not possible without the help of those abstract or mathematical theories which Economics has been inheriting for a long time past. The method by which a major part of such theories has grown is called deduction. It was greatly used by the classical and the Austrian economists. Amongst modern economists also it is being used with no less an ardour. In fact the growing use of Mathematics in Economics today is an evidence that modern economists hold deduction as of far greater importance than induction.

The deductive reasoning

Deduction or the method of deductive reasoning is what may be described as the technique of an abstract approach

to the problems of a science. It would take up a few undisputed fundamental facts and after adding some assumptions to them build up a theory which may or may not correspond to reality. There is no questioning about the fact that when more and more units of a commodity are consumed in the same stretch of time, the marginal utility of the units goes on diminishing. On the strength of this fact and the assumptions of maximum satisfaction and constant tastes and income the economist will discover that an individual must arrange his expenditure in accordance with the law of equi-marginal utilities. He would not bother his head whether it is a fact that an individual wants maximum satisfaction and whether his income and tastes are really constant. His approach will be purely academic; he would need no collection of statistics to arrive at his decisions. And in so far as this is so, we would say that the economist is working out his generalisations through the method of deductive reasoning.

Merits of deduction

Deduction leads to exactness in a generalisation. Logic is an unfailing companion; so is Mathematics. And if we have used them properly in analysing our assumptions and arriving at our generalisations, the results would be as exact and unimpeachable as is the statement that two plus two make four.

Deduction, moreover, is simple for it helps us to get results without the botheration of collecting statistics which, as we saw above, is a complicated affair. From a few basic facts we can deduce a number of laws in a short time. Sometimes we happen to arrive on results which no amount of statistical study could have brought to our science.

In view of the fact that accurate experiments are not possible in Economics, deduction assumes a still greater importance for the economists. And as time advances Economics is getting more and more mathematical and abstract.

Both deduction and induction

There are evident dangers in being too abstract. Economics is a science of human behaviour and as such we

must see to it that its study does not by-pass that which happens in the actual life of men. Nor should it yield results that are unrealistic. But for fear of such dangers we cannot make Economics a matter-of-fact science only and give up all abstraction. Sometimes abstract results give rise to facts just as facts give rise to abstract results. And so both abstraction and a factual approach must get along side by side each helping the other and contributing to the richness of our science. Induction alone or the factual approach will never succeed in taking the people forward. For it only repeats in a generalised language the same old facts of human existence, and gives nothing new to be worked out. Nor will deduction alone serve any purpose unless we all want to be dreamers of a fool's paradise. Both, therefore, must be utilised though not necessarily in an equal degree. Sometimes deduction might be used more than induction and sometimes induction more than deduction, depending naturally on the circumstances of the people. But both will have to be used at all times and for all people or else Economics will be said to be moving unbalanced on a single leg only.

ECONOMIC STATISTICS

Need of statistics

Economics is the attempt to measure all sorts of human values in terms of grain or gold or human labour or in some other way. If all the grain and all the gold were produced regularly by the same amounts of labour all the three ways of measuring could be used interchangeably. For example if 15 maunds of grain could be grown and reaped and thrashed and brought home with 300 days of labour and if $2\frac{1}{2}$ tolas of gold could be mined and purified and carried home with the same 300 days of labour, we could measure a tola of gold by 120 days of labour or by 5 maunds of grain, and we could measure a maund of grain by 20 days of labour or $\frac{1}{6}$ of a tola of gold. But it usually happens that grain and gold cannot be so easily measured in terms of labour. For example, if a man tries to double his grain by using the same amount of labour on a second *bigha* of land as he had used on the first, he will often find that the second *bigha* is less fertile, and 300 days of labour may only produce 12 maunds instead of 15 maunds. Or even if he puts 600 days on the first *bigha*, it is very unlikely that he will produce 30 maunds. On the other hand, if two men work together for 300 days, if one is stronger and the other cleverer, by letting one man do all the work requiring more strength, and the other work requiring more skill, it is possible that they may more than double the grain which they produce.

But another difficulty is that one of the two men may not consider the other's labour equal to his own, and may demand all the surplus, whereas, if they had not co-operated, there should have been no surplus.

A still greater difficulty arises from the fact that the same 300 days of labour may produce 20 maunds of grain one year and only 10 the next; and worse still, the two men, working separately, may produce different crops the same year, and we often cannot tell whether one worked less hard,

or whether the rain was less helpful to him! We sometimes cannot even tell in the latter case whether there was too little rain or too much!

Scientific methods

It is from difficulties such as this that the need of statistics arises. If we wish Economics to become a science it is absolutely necessary to adopt scientific methods. It is generally conceded that the scientific method consists of four stages:

- (1) Observation,
- (2) Induction or Inference,
- (3) Deduction or Application,
- (4) Verification by Statistics.

The nature, and importance of these four stages of scientific method have been discussed in a previous chapter. In brief it may, however, be repeated here that the quest for knowledge begins with the observation of some very simple fact which appears to be almost universally true, such as the fact that we cannot eat twice as much at almost the same time and get double the pleasure several hours later. From this we may infer the law of diminishing marginal satisfaction; that after a certain fullness, each additional mouthful gives less enjoyment. We may widen this generalization to apply to clothing and furniture, to recreation and even to sleep. We may now add another observation, that everyone has a limited amount of time, and almost everyone a limited amount of money. And we are now in the position to infer the laws of equi-marginal satisfaction and of proportionality, which would tell us how a family would divide their time and their money among various uses, if only we could also know their relative preferences for all the satisfactions they might obtain by dividing their time and their money in different ways.

At this stage it becomes necessary to make a theoretical hypothesis, to assume that we know the scale of preferences of an average family. If this is assumed we can deduce how

the average family with a given income will spend its time and its money. We might even deduce how a given change in tax would affect these expenditures and the revenues of government. Deduction from a hypothesis thus makes possible the application of economic theories to a practical problem. But if the hypothesis is faulty, the conclusion may be unreal.

We are now ready for the fourth stage, that of statistical verification. We collect statistics of family budgets and see how closely they agree with expenses calculated. We may find that they verify our predictions, for deduction is nothing less than prediction; but the chances are that the actual result does not fit the calculation very well. In that case it becomes necessary to modify our assumption, and to find one that is truer to life, if possible. In too many cases economic theory has stopped short at deduction and has never bothered to verify its reasoning, even when there was plenty of evidence to prove that the reasoning must somewhere be false. For example, we might reason from every day experience in the sharing of food that if the population of a country doubled each family would have just half as much. But we find from the statistics of several countries in the 19th century that whenever the population doubled the wealth increased fourfold, so that the average family had twice as much instead of only half—the very opposite of the expected result! Here there is need for drastic revision of theory, and every theory, if it is to apply to the actual life of a nation, must be constantly checked by statistics.

Verification is, sometimes, divided into two parts, experiment and statistics. Experiment is, in truth, only a way of getting statistics. The difference is that in experiment the causes are controlled, while in statistics, as usually understood, the causes are not controlled or, at least, not by the statistician. Experiments are difficult in Economics; first because we are experimenting with human beings and may lose many valuable lives in the process, secondly, because these human beings have wills of their own and may change the condition during the experiment, and thirdly, because economic experiments take many years and the final results may differ entirely from the first results. For example, suppose we stop the export of grain, from a certain state, in

order to reduce the price. The first result may be what was expected, but the second and third years the farmers may produce less grain, and in the end there may be higher prices than ever before and even a dangerous famine.

Uses of statistics

We have seen that statistics may be used for measuring prices, such as the price of wheat in terms of silver or the price of labour in terms of wheat. We have also seen that statistics may be used for observation in arriving at theories and for verification and deduction of those theories. Statistics may also be used for the presentation of essential knowledge. For example, there are certain facts which every student of Economics ought to have at his fingers ends. We should know roughly the populations of the provinces, or at the very least, the population of our own province. We should know roughly the amount of food which India produces and the amount which our own province produces. We should know the quantity of cloth and the quantity of steel which we produce and which we consume. If these figures are too big to mean anything then we should find out how much the average family consumes.

Suppose we have a chart showing the production of rice and wheat in the different provinces of India. We can also represent the imports of these into India by rectangles placed in the oceans. Again, suppose we have a chart giving the average consumption of various foods in different provinces of India, such as is given in "The Food Statistics of India," a Government of India Department of Food, publication. We will certainly gain an immediate idea of the provinces which eat the most food and the provinces which eat the least. But it will be quite impossible to remember the exact quantity consumed in each province. It is for this purpose that we need one figure which shall serve as a picture of them all. This figure is usually called an 'average.'

Averages

The average is a single figure which gives the best picture or the best representation of all the figures. There are

many possible averages, but the two which are most in use are the ordinary arithmetic average and the median. The arithmetic average, which we all learn to calculate in school, is obtained by adding the figures and dividing by the number of figures added. The median is simply the middle figure, a figure so chosen that half the figures are higher and half are lower. It has the advantage that it can be found without even knowing the highest and the lowest figures, but only the order in which they occur, provided a few of the middle measurements are known.

This one figure may be easy to remember, but it is immediately seen that it does not tell us anything about the difference between the highest and the lowest figures. For example, if we know the prices of wheat, month by month, for a number of years, we not only wish to know the average, we also wish to have some idea as to how much the prices fluctuate between higher prices and the lower prices. Such a figure, which measures the spread of the prices, is called a measure of dispersion. The simplest measure of dispersion is the difference between the highest and the lowest figures, which is called the 'range' of the figures. However, as it is recognised that the highest and the lowest may be very exceptional figures, several other measures of dispersion have been devised. The early statisticians used the medians of the upper half and the lower half which they called quartiles. These quartiles are still in use because they present an idea which is easily understood by all students, namely that half the measurements lie between the two quartiles and half outside, so that it is equally probable that the prices at any future time will lie or will not lie between these limits. Later writers preferred to take an arithmetic average of all the deviations of the measurements from their own average, regarding the deviations as all positive. This is called the 'average deviation'. In recent years by far the most used measure of dispersion has been the 'standard deviation'. It is found by taking the arithmetic average of the squares of the deviations and then taking the square-root. This is a more complicated measure but is used because it has great mathematical advantages. The reasons for these advantages cannot be explained here. It need only be stated that about two-thirds of the measurements will be found within the limits of

tained by adding and subtracting the standard deviation from the arithmetic average. The same limits mark the points where the diagram of the measurements begins to flatten out and the two-thirds of the measurements within these limits are much more closely grouped together than the remaining third, which may spread out by great deviations above and below these limits. The usual method of picturing a group of prices by two figures only is to say that the average price equals the arithmetic average of all the prices plus or minus the standard deviation; but it is quite as effective, and is considered more valuable by many statisticians, to give the median and the two quartiles. This also has great advantages in the case of statistics like prices which are subject to greater fluctuations on the upper side than on the lower. In the case of incomes, also, and many other economic statistics, such as the sizes of the factories, the larger figures may be several thousand times the smallest, so that a measure of dispersion is needed which moves much further away from the average on the upper side than on the lower.

Calculation of averages and their uses

In the first column in Table I is the population of the nine major provinces of India rounded to the nearest million. In order to enable the reader to take in the figures at a glance, these figures are arranged in the order of magnitude so that the middle figure, representing the Punjab, is the median, namely 24 millions. The arithmetic average is 27.6 and it will be found that in every case for the figures which are given in both Table I and Table II, the arithmetic average is higher than the median except in the case of the excess of birth rates over death rates. In the case of industrial workers the average happens to be exactly twice the median but in most of the figures, it is not more than 10 per cent higher. In all the columns, the provinces are arranged in the same order as in the first which means that in no other case are figures in order of magnitude. In fact it will be found that every one of the nine provinces becomes the median province in one or more cases. The United Provinces gives the median figure more often than any other province.

Let us consider the following figures.

TABLE I

| Major Provinces of India | Population : 1931 : Millions | Area : 1000 sq. miles | Density of population per sq. mile : 1931 | Birth Rate : 1938 | Death Rate : 1938 | Excess of Births over Deaths per 1000 : 1938 |
|--------------------------|---------------------------------|-----------------------|--|-------------------|-------------------|---|
| Bengal ... | 50 | 77 | 647 | 28.9 | 25.0 | 3.9 |
| U. P. ... | 48 | 106 | 456 | 33.6 | 23.6 | 10.0 |
| Madras ... | 44 | 126 | 350 | 35.7 | 21.6 | 14.1 |
| Bihar ... | 32 | 70 | 464 | 31.8 | 21.8 | 10.0 |
| Punjab ... | 24 | 99 | 238 | 43.8 | 23.4 | 20.4 |
| Bombay ... | 18 | 76 | 235 | 38.7 | 27.9 | 10.8 |
| C. P. ... | 15 | 99 | 156 | 39.5 | 37.6 | 1.9 |
| Assam ... | 9 | 55 | 157 | 27.9 | 20.9 | 7.0 |
| Orissa ... | 8 | 32 | 249 | 32.9 | 28.8 | 4.1 |
| Total | 248 | 740 | 2,952 | 312.8 | 230.6 | 82.2 |
| Arithmetic Average | 27.6 | 82.2 | 328 | 34.75 | 25.62 | 9.13 |
| Median ... | 24 | 77 | 249 | 33.6 | 23.6 | 10. |
| Range ... | 42 | 94 | 491 | 15.9 | 16.7 | 18.5 |
| First Quartile. | 13.5 | 66.25 | 215.5 | 31.025 | 21.75 | 4.05 |
| Third Quartile | 45 | 100.75 | 462 | 39.3 | 28.125 | 11.625 |
| Inter-Quartile Range | 31.5 | 34.5 | 246.5 | 8.275 | 6.375 | 7.575 |
| Half the Above. | 15.75 | 17.25 | 123.25 | 4.14 | 3.19 | 3.79 |
| Average Deviation. | 13.8 | 21.9 | 125.7 | 4.0 | 3.5 | 4.3 |
| Standard Deviation | 15.6 | 26.9 | 156.0 | 4.9 | 5.0 | 5.4 |

TABLE II

| Major Pro- vinces of India | Population : 1931 : Millions | Production : Total Cereals : 1938-39 : Lakh Tons | Production : Seers per Adult : 1938-39 | Consumption : Ce- reals and Gram per Adult : 1944- 45 : Seers | Electricity : KWH generated : Mil- lions | Factories | Industrial Workers Employed : 1000 | Cotton Spun : Million Lbs. |
|----------------------------------|---------------------------------|--|---|--|--|-----------|---------------------------------------|-------------------------------|
| Bengal | 50 | 77 | 216 | 195 | 846 | 1735 | 563 | 46 |
| U.P. ... | 48 | 79 | 230 | 240 | 367 | 530 | 155 | 118 |
| Madras | 44 | 63 | 200 | 220 | 370 | 1818 | 194 | 169 |
| Bihar | 32 | 40 | 174 | 180 | 74 | 311 | 93 | 3 |
| Punjab | 24 | 44 | 256 | 210 | 195 | 780 | 72 | 166 |
| Bombay | 18 | 32 | 224 | 260 | 1323 | 2495 | 479 | 48 |
| C.P. ... | 15 | 36 | 336 | 250 | 39 | 737 | 62 | 60 |
| Assam ... | 9 | 17 | 264 | 220 | 4 | 765 | 51 | 0 |
| Orissa ... | 8 | 15 | 262 | 250 | 2 | 80 | 5 | 0 |
| Total | 248 | 403 | 2162 | 2025 | 3220 | 9251 | 1674 | 1060 |
| Average | 27.6 | 44.8 | 240 | 225 | 358 | 1028 | 186 | 118 |
| Median | 24 | 40 | 230 | 220 | 195 | 765 | 93 | 46 |

SCHOLARS—1938

| Major Provinces | Boys in Thousands | Girls in Thousands |
|-----------------|-------------------|--------------------|
| Bengal | 2953 | 534 |
| U.P. | 1697 | 154 |
| Madras | 2790 | 433 |
| Bihar | 1054 | 83 |
| Punjab | 1091 | 255 |
| Bombay | 1341 | 226 |
| C.P. | 476 | 54 |
| Assam | 489 | 55 |
| Orissa | 330 | 19 |
| Total | 12221 | 1813 |
| Average | 1358 | 201 |
| Median | 1091 | 154 |

TABLE III

| Provinces | Census Population 1931: Millions | Average Excess: Birth Rate less Death Rate | 1941 Population calculated from- Birth and Death Rates | Census Population 1941: Millions | Deviation: Millions |
|-----------|-------------------------------------|--|---|-------------------------------------|---------------------|
| Bengal | ... 50 | 6.8 | 53.5 | 60 | +6.5 |
| U.P. | ... 48 | 12.45 | 54.3 | 55 | +7 |
| Madras | ... 44 | 12.9 | 50.0 | 49 | -1.0 |
| Bihar | ... 32 | 11.2 | 35.8 | 36 | + .2 |
| Punjab | ... 24 | 17.8 | 28.6 | 28.4 | - .2 |
| Bombay | ... 18 | 11.9 | 20.3 | 21 | + .7 |
| C.P. | ... 15 | 9.6 | 16.5 | 17 | + .5 |
| Assam | ... 9 | 10.0 | 9.9 | 10 | + .1 |
| Orissa | ... 8 | 6.2 | 8.5 | 9 | + .5 |
| Total | ... 248 | ... | 277.4 | 285.4 | +8.0 |

TABLE IV—India's Food

All foods

Cereals : Millions of Tons

| | | | | | |
|---------------------|----|-------------------------|-----|---------------|----|
| Rice | 30 | Cereals | 60 | | |
| Millets | 15 | Pulses | 8 | | |
| Wheat | 10 | Sugar | 6 | | |
| Barley and Maize | 5 | Fats, Oils | 7 | | |
| | | Fruits, Vege- tables | 7 | Actual Weight | 2 |
| Total | 60 | Milk, Eggs | 6 | Million tons. | |
| | | Meat, Fish | 8 | Actual Weight | 21 |
| | | Total | 102 | Million tons. | |

The first difficulty occurs in finding the quartiles. For example, in the case of population if there had been 10 figures the first quartile would have been in the middle of the lower five figures. Then it would have been 15. If there had been 8 figures, the first quartile would have been in the middle of the lower four figures, that is half way between 9 and 15, which is 12. But as there are 9 figures it must be half way between the two figures 12 and 15, which is 13.5. Another way to say this is that it is three quarters of the distance from 9 to 15. In the same way the third quartile would be 44 if there were 10 figures and 46 if there were only 8 figures. But as there are 9 figures it is 45. In other words it is three-quarters of the way down from 48 to 44. The difference between these two quartiles is called the interquartile range and is 31.5. As the average deviation and the standard deviation are only half of the range given by supposing that the average might deviate to this extent both above and below, we only take half of the interquartile range for purposes of comparison with the average deviation and the standard deviation. Thus, in this case the semi-interquartile range is 15.75, the average deviation 15.6. Here it is the largest but usually it is the smallest of the three. It can be shown theoretically when in many cases the semi-interquartile range is about two-thirds of the standard deviation; while the average deviation is about four-fifths of the standard deviation. In the other columns where the figures are not in order of magnitude it will be best to arrange them in order before trying to find the median or the quartiles. A short method for finding the average deviation and the standard deviation is explained below.

It can be proved that the average deviation is least when it is measured from the median while the standard deviation is least when it is measured from the arithmetic average. We, therefore, would write the average population of a province in India either as $24 + 13.8$ if the median is used, or $27.6 + 15.6$ if the arithmetic average is used. Our labour can be saved in calculating these deviations by choosing a number between the median and the nearest figures above and below. For example, take 25 in this case, and calculate all the deviations from this number. Then by omitting the deviation from the median itself we obtain the sum of the deviations from the median. Again these deviations must be squared in

order to find the standard deviation and they are much easier to square than the deviations from the average. But after adding the sum of the squares we must subtract the square of the difference between the average and the number we have used in calculating the deviation. In this case the square of 2.6 would be subtracted from the sum of the squares as calculated and this would give a sum of the squares of the actual deviations from the average. The number chosen may be the median or any number between the median and the average unless one of the other figures comes in between. In this case the number chosen to make the calculations easy, should not be higher or lower than one of the numbers next to the median.

The figures used in these tables are taken from the Statistical Abstract for British India from 1929-30 to 1938-39, and from the Food Statistics of India published by the Government of India, Department of Food, 1946. Several interesting uses of statistics can be illustrated from the above figures. For example, if we take the birth rates and death rates and the excess of births over deaths given in the Statistical Abstract, we can calculate the average rates at which the population should have increased from 1931 to 1941, although the figures are only given for 8 years in the case of six provinces, and only for three years in the case of Bombay, from which Sind was separated, and in the case of Bihar and Orissa, which were separated from each other. We used the population figures for 1931 because considerable doubt has been cast on the census of 1941. It has been suggested that in some cases the enumeration may have been added to for political purposes. When we check the census of 1931 increased by the figures of the excess of births over deaths, we find a remarkably close agreement with the census figures of 1941 excepting in the case of Bengal, where the population calculated from births and deaths should have increased by only 3.5 millions instead of by 10 millions (See Table III). The close agreement of these figures obtained in two absolutely different ways from the entirely distinct data greatly increases the probable reliability of both the census figures and the figures for birth rates and death rates, except in the case of Bengal, where it appears that either the census figure is between 6 and 7 millions too great or else the birth rates are far too low and the death rates

far too high. We also find that the density of population in Bengal in 1931 was already 647 per square mile and 183 greater than in any other province. If the census figures were correct this density would have risen to 779 per square mile in 1941, which is more than 250 above Bihar and U.P. Such a density can be explained in the highly industrial area around Calcutta and excessively fertile areas of the delta, but is very unlikely for a whole province. We may also notice the figures of production and consumption per adult in 1938-39 and 1944-45. The figures are not strictly comparable as the later figures, calculated from Food Statistics of India, include gram as well as cereals. But we may notice that all the industrial provinces have consumed more than they produced except Bengal. It seems, at least, possible that the low figure given for Bengal is due to the total quantity of cereals being divided by the population of 53.5 millions. If this had been done the figure for Bengal would have remained almost equal to the figure for production in 1938-39. There are, of course, other explanations, such as the impossibility of importing rice from Burma during the war and this would also have been enough to make two figures level. But both explanations are needed to make the Bengal figure as much greater as in the case of Madras, which has about the same production of cereals and the same number of factories as Bengal, but less industrial workers and electricity.

Speaking of Indian cereals, it is interesting to note that the total cereals produced, on an average, is about 60 million tons of which almost exactly 30 million tons is rice, 10 million tons wheat and 5 million tons maize and barley; the remaining 15 million tons consists of millets given in the statistics under four heads, jawar, bajra, ragi and small millets. If we can remember the figure 60 millions then we may easily remember half rice, a quarter millets and a quarter wheat, barley and maize. However, it is most important to remember that India is not entirely dependent upon cereals for her food. The pulses, including gram (chana), lentels (dal), peas and beans, used to be published along with the cereals in Government statistics, so important were they considered, and as the U.P. grows more of them than any other province we should not forget them. The pulses come to about 8 million tons. Sugar consumption in India is equivalent to six million tons of gur. Fats and oils including ghee come to 7 millions. The actual

weight of the fruits and vegetables is about 20 million tons and if we estimate the value of the vitamins in these vegetables, this figure, perhaps, gives the truest impression of their value. But if we try to calculate their dry weight or the calories obtained, in order to compare them with the cereals, then the weight comes to about 7 million tons, while meat and fish are at least 8 million tons, though no one knows the quantities of fish which are caught and consumed in the villages. On the whole we may be assured that the total food of India comes to more than a hundred million tons, another easy figure to remember. Thus the cereals are, probably, not more than 60 per cent of our food.

Many other uses, both practical and theoretical, can be found for statistics. One more example which is important both in theory and practice, must satisfy us. It is that of index numbers. If we wish to measure in terms of money, and money itself is constantly increasing or decreasing in value, we are in the same position as if we tried to measure a table with an elastic tapemeasure, such that an inch could suddenly stretch to two inches and then snap back to half an inch! For this purpose we need an average of prices. Some prices may be increasing, some decreasing, but by taking an average we get at the general trend of prices. We can also form an index of wages. Then by dividing the index of wages by the index of prices we obtain an index of real wages. Even then we get into difficulties. For example, in times of depression, when prices are falling faster than wages, we find the index of real wages increasing, just when many labourers are starving because they are out of work. We then have to reduce the index of real wages by the percentage of unemployed to get what may be called an index of social real wages. This, to some extent, measures the pulse of the nation, its standard of living, and its economic progress. This may also be checked by an index of production, industrial and agricultural.

Whole books have been written about index numbers, but the perfect index of prices has not yet been found. This is one of the beauties of statistics, that the field is still wide open for an enterprising and enquiring mind, and the best way of measuring national progress may yet be discovered by some hard-working student, who does not even know much mathematics beyond arithmetic.

CHAPTER VIII

THE SIGNIFICANCE OF ECONOMICS

Distinction between fruit-bearing and light-bearing knowledge

Often times it has been repeated that knowledge is of two varieties—one called fruit-bearing and the other light-bearing. And any science can belong to either of these groups. It need hardly be said that since ultimately all knowledge is both light-bearing and fruit-bearing, this classification of it and hence also of the sciences that describe it is, perhaps, misleading. That a certain science might be more light-bearing than fruit-bearing or more fruit-bearing than light-bearing is true no doubt. But this does not warrant that we should call a science entirely light-bearing or fruit-bearing for that reason. Economics, like any science, has both these elements mixed up in itself. And so we would be right in saying that Economics exercises a deep influence on the minds of men on the one side and on their behaviour or practice on the other. For that is what light-bearing and fruit-bearing elements mean. The light-bearing element is concerned with enlightening the mental capacities of a man in such a manner that he may be able to grapple with the facts of his existence, analyse them and find out proper solutions of the difficulties attending on them. The fruit-bearing element is concerned with suggesting to men direct solutions, as it were, of many problems without making them do much mental exercise which light-bearing elements involve them in. The light-bearing element in a science is more abstract and remote and less specific and points to no immediate benefits, the fruit-bearing element is more concrete and direct and more specific and points to immediate benefits.

The significance of Economics lies in the impact that its elements exert upon the behaviour of men as concerned with the making of choices. The statement of the Law of Diminishing Utility has many impacts on the behaviour of a man. He will, for example, stop desiring too much of the same commodity. Also when he realises that the marginal utility of

additional money to him goes on decreasing, he would not mind sparing some money for charity to the poor. If men were not conscious of this law, they would have purchased much larger quantities of things than they actually do. And so their behaviour and their choice would be different.

The chief importance of Economics

The chief importance of Economics to mankind, however, lies in the stress that it lays upon the object of controlling or simplifying our wants. Who would dispute that a large part of our anxieties in the modern world has grown because of our complex living? When men are taken up by the thoughts of an increasing number of wants that they wish to satisfy for themselves they cannot but be selfish, materialistic and forgetful of those higher values of life—prayer, love and truth-telling, which the fallen men of to-day stand in so great a need of.

It has been suggested that Economics as a science has the least to do with these "higher values of life". We doubt whether it is ever possible to divorce a science from any values of life whether high or low. It is not impossible to choose an ideal with which life is in harmony everywhere and with respect to which all sciences must conduct their studies. The ideal of minimisation of wants is an ideal of that variety. Some are of the opinion that the problem of ideal is the problem of Ethics. We would submit that every science has to have an ideal or else the very studies of that science would not be ever possible. And if an ideal must be chosen it should be such as to contribute to better values of life rather than to the meaner ones. What does one mean by saying that Economics should not concern itself with the "higher values of life"? Surely enough it does not mean that Economics should be associated with the "lower values of life" then! Or is it that he wants that Economics should be associated with no "values of life" whatever? If this is what he wants, he renders economic studies, perhaps, completely impossible. For how can we study without knowing the relationship of human behaviour to those values of life with respect to which it has been undertaken? The consideration of life's values and these too of the higher

variety is indispensable for any science that studies human behaviour. -

A misunderstanding of the significance

The significance of Economics has, however, been misunderstood in many matters of practical value. The Law of Diminishing Utility, for example, is being used by the governments as a basis for all progressive taxation. The rich are asked to pay more than the poor because it is said that the marginal utility of money to them is lower than the marginal utility of money to the poor. The Law of Diminishing Utility tells us nothing beyond this that increasing amounts of money with the same man imply less and less utility to him by the additional amounts. It does not suggest for a moment that if one man has greater income than another then if the marginal utility of money to one is 100, then to the other it would only be, say, 50. All that it would say is that if the poorer man gets more money, then the marginal utility of money to him would become less than what it was before. So also if the richer man gets more money. But it is one thing to say that each of them would be having less marginal utility from money than before, if more money comes into his pocket, and another thing that the decreased marginal utility of money to the poor man would be necessarily less than the decreased marginal utility of money to the rich. And yet such comparisons are justified on the grounds of the economic Law of Diminishing Utility. And Economics is praised for it having made possible for governments to have incomes through progressive taxation. Let us not praise Economics for something in which Economics has no hand at all.

Consumption
PART II

CHAPTER IX

WANTS

DEFINITION OF CONSUMPTION

The dictionary meaning of the word 'consumption' is destruction. Some earlier economists therefore defined consumption as 'destruction of matter'. This definition might imply that matter is destructible. That however is incorrect, when a thing is used up the matter of which it is made merely changes its form. Thus for instance when coal is burnt it is transformed into carbon and carbon-di-oxide. Hence this definition is misleading.

The other and a better definition of consumption is 'destruction of utility'. In production, the producer arranges and re-arranges utilities in such a manner as to make a commodity more useful. Hence in production utility is created. In consumption, on the other hand, this arrangement of utilities is destroyed. Consumption may, therefore, be defined as destruction or reduction of utilities.

This definition is better than the former one because it conveys the essential idea underlying consumption. But its main defect is that it identifies consumption with destruction of utilities. As a matter of fact destruction of utilities is the result of consumption rather than consumption itself.

Marshall has given a very simple definition of consumption. He says that it is 'negative production'. But this is what may be called a negative definition. It says what consumption is not; it does not say what it is. Further, in order to understand this definition, it becomes necessary first to know what production is.

Modern definition of consumption. In Economics, consumption is a process during which utility of a commodity is destroyed during the satisfaction of a human want. Production then is a process during which utility of a commodity is multiplied or created in satisfying a human want. The main

distinction between the two lies in the angle from which a process is viewed. If the use of a commodity is looked at from the point of view of some want, the removal of which causes a decrease or destruction of utility, it is called consumption. If the use of it is looked at from the point of view of some want, the removal of which results in an increase or creation of utility, we call it production. In every use of a commodity, these two aspects exist side by side. When we eat food, eating from the point of view of the want for eating implies decrease of utility. But eating from the point of view of the want for health, for instance, implies an increase of utility. Therefore, it is the angle from which it is looked at that determines whether a particular use of a commodity is to be considered a process of production or a process of consumption; the mere use of a commodity cannot be regarded as consumption or production.

CHARACTERISTICS OF HUMAN WANTS

We have defined consumption as a process in which the utility of a commodity decreases during the satisfaction of any human want. As the object of consumption, i.e., the direct satisfaction of human wants is of great importance in the study of the laws of consumption, let us consider the main characteristics of human wants.

The first characteristic of human wants is that each want *can be completely satisfied* when there are sufficient resources. If a man is hungry he can completely satisfy his want for food if he has got all the necessary means. Similarly he can satisfy his want for food and other articles. But it is said that the want for resources can never be completely satisfied. Money is the most important of all resources. It may be noted that money is not required for its own sake. It is required for the commodities which can be had in exchange for it. Therefore the want of money is, in a sense, not an individual want but a combination of the wants of all those commodities which can be had in exchange for it. Hence the want for money which is one chief resource is not satiable although the want for individual commodities is completely satiable.

The second characteristic of wants is that *they are unlimited*

in number. As soon as one want is satisfied another arises and the process continues till the entire resources are exhausted. However rich a person may be, the amount of money at his disposal is always limited and with limited resources he cannot satisfy his unlimited wants. Hence every person rich or poor, has some unsatisfied wants. We can say, therefore, that though each individual want is satiable, all wants together are insatiable.

The third characteristic of wants is that *they vary in intensity.* All wants are not felt equally keenly. At any particular time there is a want which is most keenly felt and when it is satisfied, another want which was less keenly felt begins to be felt more keenly and in this way the process continues. We can always arrange the wants of an individual in the order of their intensity. But this is undoubtedly true that the scale of preferences would be different for different people. A cultivator's scale of wants would be different from that of a student or a collector of revenue.

Some wants are complementary. In most cases commodities are wanted in a group and a single article of that group cannot satisfy the whole want. The want for tea is, generally, a combination of wants for tea, milk and sugar and it cannot be satisfied unless these three commodities are available. *Some wants are competitive.* They can be satisfied either by one or another commodity. When a person is hungry, he can satisfy his want completely by taking a meal in his house or in a hotel, by taking sweets or by taking fruits or by combining all these things. When he finds that the price of wheat is very high for him, he satisfies his want for food by substituting some inferior food grain, barley or bajra, for wheat to some extent. When he finds that a particular want can be satisfied in more than one way, he decides in which particular way he should satisfy it.

Some wants when they continue to be satisfied in a particular way tend to become a habit. When a particular habit is formed it is difficult to change it. Many people become habituated to taking tea, intoxicating drugs or liquors and smoke a large number of cigarettes every day. Even when they realise the bad effects of the consumption of these commodities

on their health and efficiency they are unable to give them up. But it may be noted that a want for a commodity for which habit is formed can be given up, if a person has a strong will and is determined to give it up.

Desirability of controlling wants deliberately

While considering the characteristics of wants we found that wants are unlimited while the resources for their satisfaction are limited. When a want is satisfied the consumer feels pleasure and when it remains unsatisfied he feels pain. The only way to remove this pain or misery is to control our wants deliberately so that the limited wants can be satisfied with the limited resources at our command. The deliberate control of wants leads to simple living and not to starvation, insufficient clothing or bad housing. In fact the wants for good quality of food, proper clothing, and shelter in well ventilated and clean houses have to be encouraged. The control of wants should result in proper selection of wants for fulfilment. Only harmful wants have to be given up and useful wants substituted for them. Care should, however, be taken to limit our wants to the resources at our disposal. If wants are allowed to multiply freely undesirable consequences are likely to follow.

It is no doubt true that wants give rise to activities and the greater the number of wants, the greater are our economic activities. The multiplicity of wants leads to maximum economic activities and the maximum production of wealth. But every increase in the unit of output is accompanied by an increase of so many wants at the same time that eventually if output has increased by x , wants would increase by kx (where k is any positive integer) leaving a yet wider gap between the pain of wants and the possibility of its total removal.

† Some people think that limitation of our wants is not practicable at the present time. They forget that the satisfaction of the wants of a person is limited by the amount of resources at his disposal. Every person has forced limitation of wants with the result that some wants remain unsatisfied resulting in pain and misery. If he controls his wants deliberately he may have all his wants satisfied with the amount

of resources earned by him. But wants can be controlled deliberately when a person has a strong will. Most of the people lack will power and, therefore, they cannot control their wants voluntarily and they become miserable when the control of wants is forced upon them by inadequacy of resources. A strong will power can be developed by practice, and high thinking is of great help in this direction. In India, examples of persons following the ideal of plain living and high thinking are not lacking. Mahatma Gandhi was a great advocate of this ideal and followed it in his own life. There is nothing unpractical in the ideal. Any person with a firm determination can follow this ideal with a little practice. It is through this ideal alone that he can have continuous happiness, peace of mind and contentment.

A person following the ideal of plain living and high thinking will always consider the interests of others as his own and will never exploit or cheat others.

Thus when people begin to control their wants deliberately or follow the ideal of plain living and high thinking, exploitation of every kind stops, bribery and corruption disappears and the Society becomes happier and more contented.

CHAPTER X

UTILITY

Definition of utility

We defined consumption as a process by which the utility of a commodity is destroyed with the object of satisfying human wants. We have already discussed the characteristics of wants. We shall now consider the definition of utility.

The utility of a commodity is, generally, defined as its capacity to satisfy human wants. This implies that utility depends upon the quality of a commodity only. But this is not so. Utility depends upon two things : (1) the quality of the commodity, which is an objective consideration and (2) the intensity of the want of a consumer, which is a subjective consideration. Both these considerations collectively go to decide the amount of utilities which a consumer will get from a commodity. As such a correct definition of utility must point to both these considerations. We can thus define utility as the ability of a commodity to give satisfaction to a person at a particular time*.

The utility of a commodity must be clearly distinguished from its price which is the value of a unit of the commodity in terms of money. Price is value in exchange. At any particular time the price of a commodity may be the same to every person irrespective of his circumstances or environments. If the price of wheat is six annas a seer, then it may be the same for every person whether he is a rich man or a poor man or whether he is hungry or not while the utility of a seer of wheat is most likely to be different to different persons. Other things being equal, a seer of wheat, to a poor man, has greater utility than to a rich man.

Comparison of utilities. Utilities of different commodities to the same person or the same commodity to different persons;

* See also in this connection 'Essays on Economics' by Jevons for very brilliant and illuminating definitions of 'utility' and 'potuality'—a word coined by him. pp 88-89.

are often compared. For purposes of comparison, however, some unit of utility is needed. It may be noted that no uniform unit of utility is available. For, utility is a subjective phenomenon. If we assume that utility derived from the consumption of one orange to a particular person at any given time is equal to one unit and he wishes to calculate the utility of bread taken by him at the same time, he has to compare carefully in his mind the satisfaction derived by him from the consumption of orange with that obtained from bread. If he finds that the satisfaction derived from the consumption of one bread is nearly five times the satisfaction he obtained from the consumption of an orange, he would say that the utility of one bread to him is five. But the satisfactions derived by the same person from bread and orange might be different at some other time so that we cannot say that the utility of bread to this person will always be five assuming the utility of orange to be equal to one. The comparison of utilities can be made very roughly for different commodities or different quantities of the same commodity to the same person at any particular time. But utility of the same commodity to different persons cannot be easily compared because there is no common unit of utility for such a comparison. We say that the utility of a rupee to a poor man is greater than the utility of a rupee to a rich man but we cannot definitely say whether this is always so.

In conclusion we may note :

(i) utilities of different commodities to the same person at any particular time can be roughly compared by assuming a unit of utility which holds true for that particular comparison only. The same unit is not applicable to any other person or to the same person at any other time.

(ii) utility of the different quantities of the same commodity to a particular person can be roughly compared by assuming a unit of utility for that particular comparison.

(iii) utilities of the same commodity to different persons at a particular time or the utility of the same commodity at different times cannot be compared except by

assuming the same sensitiveness in all persons or in the same person at all times.

Total and marginal utilities

*The marginal utility of a given amount of any commodity to any person is the utility of the last unit of that commodity while the total utility is the sum of the utilities of all successive units of the commodity. If a person has ten seers of wheat, then the marginal utility of ten seers of wheat is equal to the utility of the tenth seer of wheat. But the total utility of ten seers of wheat is the sum of utilities of all the ten seers of wheat. When a person has only one unit of a commodity its marginal utility and total utility are the same. When the marginal utility of a given amount of a commodity is zero its total utility is maximum. The marginal utility of a commodity becomes negative when it is consumed even after the point of satiety or complete satisfaction is reached. If a person's hunger is satisfied with five loaves of bread and he is induced to take the sixth loaf he might develop stomachache. The sixth loaf we would say gives him negative utility. Such cases are very rare.

Measurability of utility

In every scientific study there is need for some instrument for correctly measuring various phenomena and for carrying out scientific analysis. For instance, a thermometer is used for measuring heat, a physical balance is employed in order to measure weight, a yard-stick is used for measuring cloth and so on. We made use of 'utility' in an economic study for a similar purpose.

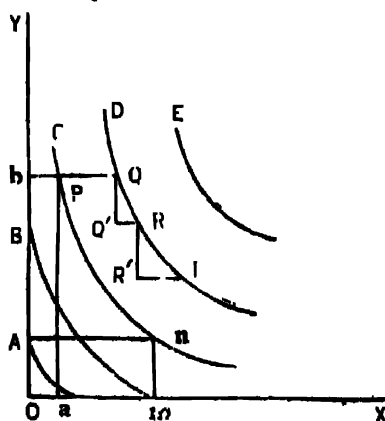
But this instrument of measurement has one serious drawback that it is not as correct and accurate as, for instance, a thermometer. Utility can be measured only by the consumer and not by any other impartial observer. For instance, if A is consuming a mango he alone can say how much satisfaction he gets from it. Any other person cannot say with any amount

*In mathematical language we define marginal utility as the addition made to the total utility by consuming one more unit of a commodity. The idea here is the same as in the above definition. The only thing is that mathematically this is more sound.

of certainty the amount of utility that *A* has got by consuming that mango. At best he can make a guess. To overcome this difficulty economists have found out an objective measure of this subjective feeling. They say that the maximum amount of money which a man is willing to pay with a view to procuring a commodity can be taken as a measure of his utility for that commodity. So the amount of money which a man is willing to pay is the objective measure of the subjective quality, 'utility'. But Prof. Pigou has correctly pointed out that money does not measure utility but only the 'intensity' of one's desire. This being so, money is not a correct measure of utility. We cannot say that money directly measures the utility which a man gets from a commodity. It is only a convenient index of our preferences.

The modern economists have, therefore, given up the use of the word 'utility' and have devised a new technique of indifference curves for a scientifically more correct analysis..

Indifference curves—An indifference curve is a curve drawn with reference to two axes on each of which is represented one commodity. Thus, any point on an indifference curve indicates the amounts of the two commodities consumed, while the position of the curve as a whole indicates the amount of utility obtained. In the diagram below *C* is an indifference curve of a consumer. The point *P* on it stands for *Oa* quantity of



the commodity *X* and *Ob* quantity of the commodity *Y*. The point *n*, likewise, stands for *Om* of *X* and *OA* of *Y*. The curve

is so drawn as to keep the utility constant. The consumer in question gets the same utility from the combination of commodities X and Y represented by point P as he gets from the combination represented by the point n . Every point on the curve C shows a different combination of commodities X and Y from every other point; but the utility is always the same. And, since the utility is the same, the consumer is indifferent between the various combinations. The curve C is, therefore, called an 'indifference' curve, or more fully, a consumption indifference curve.

The curve does not indicate the amount of utility the consumer gets from the consumption of the various combinations of X and Y . All that it shows is that the utility, whatever it may be, is the same for all the combinations represented by the curve C . A, B, D and E are four other indifference curves of the same consumer. Every point of the curve D or E represents a greater quantity of the commodity X or of Y or of both. Likewise every point on the curves B and A represents a smaller quantity of one or both the commodities.

Properties of indifference curves—An indifference curve of a consumer of two commodities is convex when looked at from the origin. This shape of the curve is due to the fact that as we go down the curve by a given distance, the X co-ordinate of the point increases more and more. For instance, in the curve D , when we descend from Q to Q' the X co-ordinate increases by $Q'R$. And when we descend by the same height from R to R' the X co-ordinate increases by $R'T$. What does such a progressive increase of the X co-ordinate show? It shows that as the consumer decreases his consumption of the commodity Y he has to increase his consumption of X , and that as he is left with a smaller and smaller quantity of Y he has to substitute a greater and greater quantity of X for each unit of Y . For, then only is his utility kept constant. We know that if we consume less of one commodity we must consume more of the other to make good the loss of utility. In the beginning a small increase in the consumption of the commodity suffices to make good such a loss. But later, as we are left with a small quantity of the first commodity, every decrease in the consumption of it causes increasing loss of utility. Further, as we acquire and consume a larger and

larger quantity of the other commodity, every increase in its consumption gives a progressively smaller increase in utility*.

All this is due to the familiar fact that the marginal utility of a commodity decreases as we have more of it, and increases as we have less of it. That is why if we find necessary to substitute one unit of X for one unit of Y to start with, we have to substitute later $1\frac{1}{2}$ units of X for one unit of Y and still later perhaps 2 units and so on. Unless we do that we cannot keep the total utility of the combination of X and Y constant. In technical language we say that the rate at which we substitute X for Y , goes on increasing as we effect more and more such substitution. In other words, we say that the marginal rate of substitution goes on increasing. Every convex curve shows an increasing marginal rate of substitution.

We may note further that no two indifference curves touch or cut each other. That is because, as we have said above, different indifference curves show different amounts of one or both the commodities.

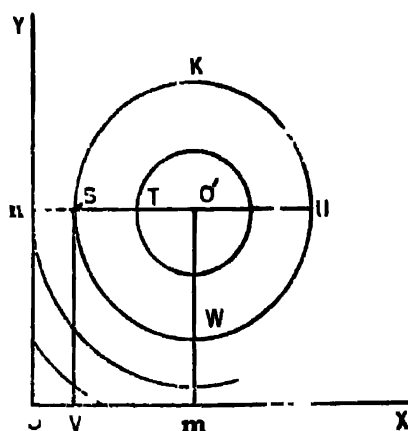
An indifference curve that is farther from the origin shows, at all points, greater quantities of one or both the commodities and therefore represents combinations having more utility than another that is closer to the origin.

The indifference curves are not necessarily parallel to one another. When the horizontal distances between the curves are constant (that is, when they are parallel horizontally) they imply constant marginal utility of the commodity X . When, on the other hand, the vertical distances are constant, the curves imply constant marginal utility of the commodity Y . When Y stands for money and X for a commodity on which a small fraction of our total income is spent, then (as Marshall also pointed out) the curves are vertically almost parallel.

An indifference curve may in some cases turn round and have some such shape as shown in the diagram

*This applies to commodities whose utilities are independent of the quantities of other commodities consumed.

below. It may be circular or elliptical or may have any other shape. Such an indifference curve is obtained when the commodities concerned are such as cannot be consumed in unlimited amounts without giving us negative utility. In the diagram Om is the maximum quantity of X that the consumer can consume. The utility thereafter becomes negative. For every increased consumption of X after that point has to imply increased consumption of Y also to compensate for the negative utility obtained from X . Likewise, On is the maximum quantity of the commodity Y that he can consume without getting disutility. If you have more of Y you have to have more of X also to compensate you for the disutility obtained from excessive consumption of Y .



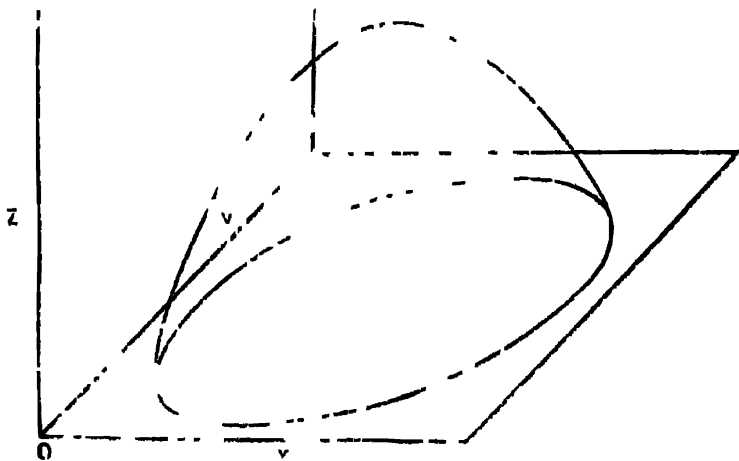
When one of the commodities is money the indifference curve is never a closed figure as in the diagram. When you have Om of X and On of Y , you have the optimum amounts of both the commodities and consequently the utility is maximum. O' , therefore, represents the position of maximum utility. The indifference curve at the point O' shrinks to a point.

*Utility surface**—We have seen that as we recede from the origin O we pass on to indifference curves of greater and greater utility. How much more utility we get by passing on to the next curve we cannot say. If we could represent utility on a third axis Z (standing out vertically to the surface $Ox-Oy$), the indifference curves farther away from the ori-

* This section may be left out by a beginner. It may be reserved for advanced study.

gin would stand higher on the vertical plane. Thus, the curve *B* of the earlier diagram would have to be lifted a little from the surface of the paper and placed higher than the curve *A*. Similarly, the curve *C* would have to be lifted a little more than the curve *B*. Every subsequent curve would thus be on a higher and higher plane.

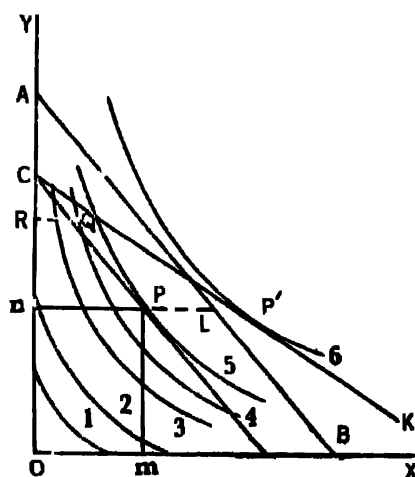
If we have indifference curves that turn round, as in the above diagram, the point *O'* would be highest in the vertical plane. Since we do not know how much more utility we get by passing on from one curve to another, we do not know also how to place a particular curve. However, if we somehow decide upon the manner in which we would represent, and thus measure on the *Z*-axis, the increasing utility obtained from passing on to remoter curves, we can draw a complete picture. The indifference curves would then produce a picture of some such shape as shown in the diagram. Under



certain conditions the picture would be that of a cone. This is known as utility surface. It can be cut by a plane that is vertical to any of the three axes of reference. If we cut it by a plane vertical to the *Z*-axis, we get an indifference curve such as *SWUK* in diagram given on page 66. If we cut it by a plane vertical to either of the other two axes we get a utility curve showing the varying degrees of utility obtained by keeping the quantity of one commodity constant and changing that of the other.

Use of indifference curves—Economists in the past, particularly the economists belonging to the mathematical school, had made a fairly extensive use of the indifference curves and had incorporated in their works most of the ideas underlying such curves. More recently their use has again been popularised by some economists. Dr. J. R. Hicks and Mr. G. R. D. Allen, for instance, have denounced, in rather strong language, the old technique of working out problems that depended on the assumption of measurability of utility. In their opinion, most of the problems of Economics can be solved without making the assumption of measurability of utility. All that is necessary, they maintain, is to know what combinations of commodities, or commodities and money, give us the same utility as any particular combination, and also what combination gives more and what less utility.

The indifference curves, or what is known as the family of indifference curves, show the varying degrees of utility that one obtains from the various combinations of commodities. The curves indicate which combination gives more utility and which less. Hence from such curves we can determine the optimum position without actually knowing what the maximum utility is equal to.



Suppose, for instance, that a consumer has his family of six indifference curves as shown in this diagram. Let the axis of X measure quantities of the commodity X and the Y -

axis another commodity Y . Let the price of X in terms of Y be indicated by the straight line AB . It shows, then, that OB of X can be purchased with OA of Y , or nL of X for A_n of Y .

Suppose further that the consumer has with him OC quantity of the commodity Y . He can purchase the commodity X at the price indicated by the line AB . If he purchases RQ of X he has to pay CR of Y and he comes to the point Q indicating that he has RO of Y and RQ of X and he passes on to the indifference curve No. 4. If however he purchases nP of X he has to pay C_n of Y for it; and he arrives at the point P on the indifference curve No. 5. (It must be noted that the straight line CP is drawn through the point C , parallel to the price line AB . It becomes itself, therefore, a price line). It will be obvious that the highest indifference curve to which the consumer can go is the curve No. 5. If he buys a smaller quantity of X he is on a lower indifference curve; if he purchases a greater quantity of X he is again on a lower indifference curve. For, it is only the point P , on the line CP , that meets the highest indifference curve. Maximum utility—whatever it may be—is therefore obtained when nP quantity of X is purchased. In this way we can find out the quantities of X that would be purchased at different prices. There is no necessity of knowing the utility of X nor that of Y . When the price changes to that indicated by the straight line CK , the consumer comes to the point P' on the indifference curve No. 6. The locus of the point P , as the price varies, traces out the familiar demand curve for X .*

*For further discussion of measurability of utility and indifference curves see, J. K. Mehta's 'Studies in Advanced Economic Theory'.

CHAPTER XI

LAWS OF CONSUMPTION

THE LAW OF DIMINISHING UTILITY

Now we consider the relation between the quantity of a commodity and its marginal utility. Suppose that a person is hungry and is taking food and that the utility of the first loaf to him is five. After consuming the first loaf, the intensity of his desire for loaves decreases and when he takes the second loaf, the satisfaction that he derives from it is less than what he derived from the first loaf. Suppose the utility of the second loaf is four and therefore the marginal utility of two loaves is also four. Suppose further that the utility of the third loaf and the marginal utility of three loaves is three. Similarly the marginal utility of four loaves is two and of five loaves is one. Now if his want for loaves is completely satisfied by taking the sixth loaf, its utility is zero and the marginal utility of six loaves is also zero. If the person is induced to take the seventh loaf, he may experience pain in his stomach after some time and this loaf may have disutility or negative utility. Therefore the utility of the seventh loaf or the marginal utility of seven loaves may be say —1.

We see a clear relationship between the quantity of loaves consumed and the marginal utility of loaves. We find that the marginal utility of loaves to a person diminishes as its quantity increases. The same relationship holds true for chairs, coal or any other commodity. Generalising we can say that the marginal utility of a commodity to a person at any particular time, decreases as the quantity of the commodity increases. This is called the Law of Diminishing Marginal Utility.

In this law, it has been assumed that the units of the commodity are consumed successively without allowing the want to get intensified by the lapse of time. If a person consumes the first loaf in the morning and the second loaf in the evening when he is more hungry, the utility of the second loaf may be greater than that of the first

consumed in the morning. This law also assumes that the condition of the consumer remains the same. If he becomes suddenly rich, the utility of a second chair to him may be greater than the utility obtained from the first chair when he was poor.

This law is represented by bars in the case of indivisible commodities, i.e., those commodities like chairs which lose in value when subdivided and by a curve in the case of divisible commodities like coal as shown in the diagrams below

| Number of chairs | Marginal utility |
|------------------|------------------|
|------------------|------------------|

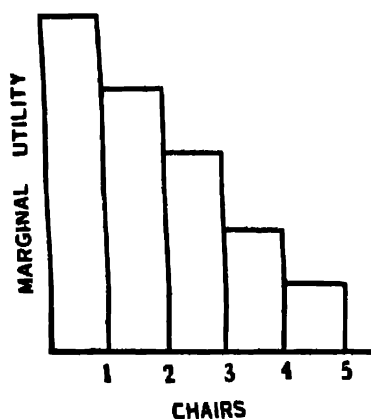
| | |
|-----|---|
| One | 5 |
|-----|---|

| | |
|-----|---|
| Two | 4 |
|-----|---|

| | |
|-------|---|
| Three | 3 |
|-------|---|

| | |
|------|---|
| Four | 2 |
|------|---|

| | |
|------|---|
| Five | 1 |
|------|---|



| Ounces of coal | Marginal utility |
|----------------|------------------|
|----------------|------------------|

| | |
|-----|--|
| One | |
|-----|--|

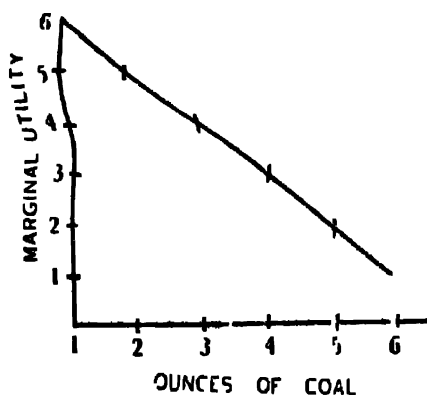
| | |
|-----|---|
| Two | 5 |
|-----|---|

| | |
|-------|---|
| Three | 4 |
|-------|---|

| | |
|------|---|
| Four | 3 |
|------|---|

| | |
|------|---|
| Five | 2 |
|------|---|

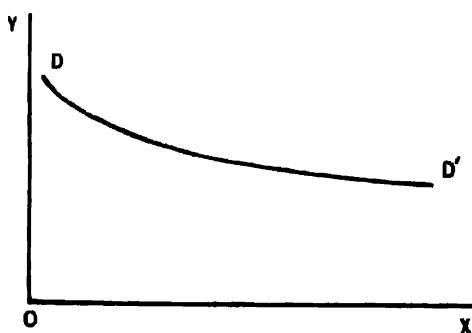
| | |
|-----|---|
| Six | 1 |
|-----|---|



In the case of rare commodities like old paintings and articles of distinction like ornaments and motor cars, it is

often observed that the marginal utility increases with an increase in their number. Suppose a person has two motor cars. He is one of ten persons who have two motor cars in that city. If he has a third motor car, it gives him the distinction of being the only person in the city who has three motor cars. Therefore the utility of the third motor car is greater than the utility of the second. The fourth car will not give him any such distinction and therefore its utility will certainly be less than that of the third car and the law of diminishing marginal utility will ultimately operate. In the case of rare commodities and articles of distinction the law seems to be inoperative. But we should note that truly speaking such cases are cases of production rather than of consumption.

One thing may be noted with regard to the marginal utility of money. However rich a man may be, the last unit of money has some utility for him. The want for money is never completely satisfied and the point of satiety or complete satisfaction is never reached. Therefore the marginal utility curve for money never touches the axis of X . It is true that the marginal utility of money decreases with the increase in its quantity, but the decrease is very slow. The marginal utility curve for money is illustrated by a diagram given below



It may be noted that DD' does not touch the axis of X and it falls very slowly clearly showing that with an increase in the quantity of money, its marginal utility diminishes very slowly.

The law of proportional marginal utility

When we consider the relation between the marginal utility of any commodity and the utility of money paid for it, we find that they are always equal. When a person purchases any commodity, he goes on spending money on it up to the point when the marginal utility of the commodity becomes equal to the utility of money paid for the last unit of the commodity and if for one commodity he pays twice as much money as for any other commodity, the marginal utility of the commodity must be nearly twice the marginal utility of the other commodity. Suppose a person purchases 10 seers of wheat and 4 seers of rice on a particular day when their prices are six annas a seer and twelve annas a seer respectively. When he purchases 10 seers of wheat, the utility of the tenth seer must be equal to the utility of six annas paid for it. In the same way the utility of the fourth seer of rice must be equal to the utility of twelve annas paid for it. As the price of rice is double that of wheat, their marginal utilities also must vary in the same proportion, i.e., the marginal utility of rice must be twice the marginal utility of wheat. As the marginal utility of each commodity to a person is equal to the utility of price paid for it, the marginal utilities of different commodities to the same person tend to be in proportion to their prices and we have an important law which shows this relationship. This law is called the Law of Proportional Marginal Utility. It says that if a person is to be in equilibrium with respect to his purchases, the marginal utilities of different commodities to him at any particular time should be proportional to the prices paid for them.

It should not be supposed that the marginal utilities of different commodities to a person tend to be equal. They would be equal only when the prices are equal and as the prices of different commodities are different in the market, their marginal utilities are also different and are proportional to their prices. Can the marginal utility of motor cars on which thousands of rupees are spent be equal to the marginal utility of cloth which may be purchased at the rate of one or two rupees per yard? The equality is in the utility obtained from the expenditure of last rupee on these commodities. The utility obtained from the expenditure of the last rupee on a

motor car is equal to the utility of the last rupee spent on it. Similarly the utility obtained from the expenditure of the last rupee on cloth is equal to the utility of the last rupee spent on it. Thus the utilities obtained from the expenditure of the last rupee on each of these commodities are made equal.

The law of equi-marginal utility

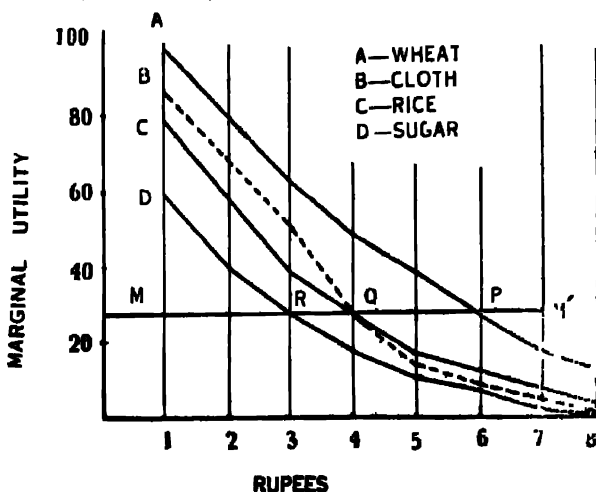
Suppose a person has twenty rupees in the beginning of a month to spend on wheat, rice, cloth and sugar and the following table gives the utilities obtained by him on spending successive rupees on wheat, rice, cloth and sugar at that particular time.

| Units of money spent | | Utilities obtained from marginal expenditure or successive rupees | | | |
|----------------------|-------|---|------|-------|-------|
| | | Wheat | Rice | Cloth | Sugar |
| One rupee | ... | 100 | 80 | 90 | 60 |
| Two rupees | ... | 80 | 60 | 70 | 40 |
| Three | „ ... | 60 | 40 | 50 | 30 |
| Four | „ ... | 50 | 30 | 30 | 20 |
| Five | „ ... | 40 | 20 | 17 | 15 |
| Six | „ ... | 30 | 15 | 10 | 10 |
| Seven | „ ... | 20 | 10 | 6 | 5 |
| Eight | „ ... | 15 | 5 | 3 | 2 |

We suppose that the utility of a rupee to the person is 30. He tries to get maximum utility for his purchases and he spends his first rupee on wheat to gain 100 utility. The second rupee he spends on cloth and the third on rice or wheat because he gets equal utilities (i.e. 80) from each one of them. If he spends the third rupee on rice, then the fourth rupee he spends on wheat, the fifth on cloth, the sixth the seventh and the eighth rupees he spends, on sugar, rice and wheat respectively as he gets equal utilities (i.e. 60) from each one of them. The ninth and the tenth rupees he spends on cloth and wheat and the eleventh, the twelfth and the thirteenth rupees he spends on sugar, rice and wheat. Similarly the fourteenth, the fifteenth, the sixteenth and the seventeenth rupees he spends on wheat, rice, cloth and sugar and gets

equal utilities (30) from each of them. In this way he has already spent six rupees on wheat, four rupees on rice, four rupees on cloth and three rupees on sugar. If he spends the seventh rupee on wheat he gets only 20 utility which is less than the utility of one rupee. Therefore he is not willing to spend his money any more on wheat or any of these commodities because he is not prepared to suffer a loss in utilities. He stops the purchase of a commodity when he finds that the utility of the commodity obtained in exchange for one rupee is equal to the utility of a rupee to him. It is only in this way that he gets the maximum utility from the expenditure of money on various commodities. As he has made the utilities obtained from his marginal expenditure (or last rupee) on each commodity equal, he has followed a law which is known as the Law of Equi-marginal Utility. This law states that every person who wants maximum satisfaction at any time spends his money on different commodities in such a way as to make the utility derived from the expenditure of the last rupee (or any unit of money) on each commodity equal at that time.

This law also, based as it is on the law of diminishing marginal utility, makes the assumptions that a consumer's income and tastes are constant and the various units of every



commodity which is purchased are equal in quality and kind. If these assumptions were not there, reduction in purchases

might lead to a decrease of utility or increase of purchases might lead to an increase of utility, both these situations would render such adjustment of purchases as conforms to the law of equi-marginal utility impossible.

The operation of this law can also be illustrated by diagram given on the last page.

Figures with regard to the utilities obtained from marginal expenditures on wheat, rice, cloth and sugar as given in the table are plotted in the form of curves in this diagram. The axis of X represents the amount of money spent and the axis of Y shows the utility obtained from the marginal expenditure, i.e., the last rupee spent on any commodity. A is the utility curve for wheat. Similarly C , B and D are the utility curves for rice, cloth and sugar respectively. A horizontal line M' represents the utility of money. At the points P, Q, R where the utility curve for money M' cuts each of the curves we have utility obtained from marginal expenditure on each commodity equal to the utility of the last rupee spent on it and therefore these are the points where the consumer stops further expenditure of money.

It may be noted that the consumer does not spend equal amount on all these commodities, nor does he make the marginal utilities of different commodities equal. If the price of wheat is eight annas a seer, he gets two seers of wheat for the last rupee he spends on it. The utilities of these two seers must be at least 30 and therefore the utility of the last seer of wheat purchased by him i.e. the marginal utility of wheat must be a little less than 15. If the price of cloth is two rupees per yard, he gets only half a yard of cloth from the last rupee spent on it. The utility of this half yard is 30 and therefore the utility of the last yard purchased by him or the marginal utility of cloth to him is at least 60. Now we find that the marginal utilities of wheat and cloth i.e. 15 and 60 are proportional to the prices of wheat and cloth i.e. eight annas and two rupees respectively. But the utility obtained from the expenditure of the last rupee on each of them is equal to 30. This distinction between marginal utilities of commodities and utilities obtained from marginal expenditure should be clearly noted. It is not the marginal utilities of the commodities

that are made equal but the utility obtained from marginal expenditure (last rupee) on each commodity that is made equal. If a consumer finds that the utility obtained from the expenditure of the last rupee on wheat is greater than the utility obtained from the expenditure of the last rupee on rice, he decides to spend less on rice and more on wheat till the utilities obtained from marginal expenditure on these commodities become equal. This kind of substitution of one commodity for another goes on till the utilities obtained from marginal expenditures on all commodities become equal. This brings us to the *law of substitution* in consumption which states that one commodity tends to be substituted for another commodity till the utilities obtained from the marginal expenditures on each become equal.

People follow the law of equi-marginal utility or the law of substitution consciously or unconsciously. Every consumer has his own scale of preferences and he tries to adjust his purchases in such a way as to get maximum satisfaction from the money at his disposal. His wants for commodities are many and he generally has a limited amount of money to spend on them. He has to choose between different commodities and therefore he compares in his mind the utilities that he expects to get from the different commodities. His object in making his choice is to get the maximum utility from the given amount of money and as he can achieve this object only by following the law of equi-marginal utility, he does so sometimes unconsciously and sometimes deliberately. When a person is in doubt whether to purchase one commodity or the other and has to decide upon one of them, the operation of the principle of substitution or the law of equi-marginal utility is clearly visible. Whenever a decision has to be made with regard to the purchase of any commodity the law of equi-marginal utility is followed.

In following this law, people generally consider only the expected immediate utility of the commodities they purchase. They ignore the long-period effects of consumption on their well-being. When a person consumes an intoxicating drug, he gets some immediate satisfaction and therefore he willingly spends some money on it. But in the long period as a result of its consumption his health may suffer a setback and the

ultimate utility of this article may become negative. Most of the people in following the law of equi-marginal utility do not consider the ultimate utility of commodities. As a result expenditure becomes extravagant. It is by proper planning of family expenditure that this extravagance can be avoided. This problem is considered in Chapter XIV.

CHAPTER XII

DEMAND

Meaning of Demand

By demand we ordinarily mean 'effective demand'. A demand becomes 'effective' when it is backed by willingness and ability to purchase a commodity. In other words, a person in order to have effective demand for a commodity must have three things: (1) desire for a commodity (2) sufficient money to purchase the commodity and (3) willingness to spend money. A miser may have enough money, but he may not be willing to spend it. In that case desire will not be called demand.*

A rich cultivator who sees his neighbour going about in a motor car desires to have one for himself. He may have five thousand rupees with which to purchase a new car. He can then be said to have a demand for a car. But if the price of a car in the market is eight thousand rupees, his demand at the high price remains ineffective. He is said then to have a potential demand for a car. His demand, however, becomes effective when the price of a car falls to five thousand rupees. This clearly shows the difference between potential and effective demand.

The Law of Demand

When we go to any market and carefully observe the dealings of the purchasers of any commodity we find that they demand more when its price falls and less when the price rises, if, of course, there is no other disturbing factor. Therefore we conclude that the demand for a commodity increases with a fall in the price and decreases with a rise in price, other things remaining the same. This is called the Law of Demand.

It is so obvious why this happens. If one purchases X units of a commodity at price (P) then this has the natural

*Some modern economists, however, define demand differently. See J. K. Mehta's 'Groundwork of Economics'.

implication that the marginal utility of the commodity is equal to the marginal disutility of the price (P) parted for it. If (P) becomes ($P+1$), the marginal disutility of the price parted would be greater, other things remaining the same, than the marginal utility of the original quantity of the commodity. And so the quantity purchased will have to be reduced so that an increased marginal utility is got which might match the increased marginal disutility of price. If the quantity purchased is increased rather than brought down, marginal utility of the commodity would be reduced further still making the gap between the marginal utilities of price and commodity even wider than before. In order, therefore, that the marginal utilities of price and the commodity purchased be equal which happens to be the condition behind all exchanges, it is necessary that when prices of commodities go up in a market, the quantities of them demanded at any time, other things remaining the same, move in the opposite direction.

This law can be illustrated by a demand schedule or a demand curve. (A demand schedule is a statement showing the quantities of a commodity demanded by an individual or a group of individuals within a given period of time at different prices. A demand schedule should clearly show whether it refers to one individual, a family, or a class of people, a country or the whole world. It should also show whether it refers to one day, a week, a month or a year) Suppose a middle class person requires for his family five seers of ghee in one month when its price is five rupees a seer. If the price increases to six rupees, he demands four seers; at seven rupees three seers only. If the price of ghee falls to four rupees a seer he is willing to purchase six seers and at three rupees a seer he requires seven seers. His demand schedule for ghee is then as follows :

Monthly Demand Schedule of a
Middle Class Family for Ghee

| Price per seer | Quantity Demanded |
|----------------|-------------------|
| Rs. | seers |
| 7 | 3 |
| 6 | 4 |

| Price per seer | Quantity Demanded |
|----------------|-------------------|
| Rs. | seers |
| 5 | 5 |
| 4 | 6 |
| 3 | 7 |

By adding up the demand schedules of different families we can have a demand schedule for a particular class of persons. Similarly we can have a demand schedule for the whole country or for the whole world. By adding up the demand schedules for all the months in a year we can have an yearly demand schedule. All these demand schedules can be represented by means of curves and then we have a demand curve for one class of persons, a demand curve for the whole country, a demand curve for the whole world or a demand curve for one week, one month or one year.

Changes in demand

Sometimes when we find that the same person in a different situation demands a greater quantity of a commodity at the same price, or when he increases the demand with an increase in the price, it seems that the law of demand does not operate. This generally happens when the circumstances and tastes of the consumers change. Suppose the person whose monthly demand schedule for ghee we considered becomes rich. If his salary is doubled he would naturally like to spend more money on ghee than what he spent before. When the price of ghee is five rupees per seer he used to purchase five seers of ghee every month. Now he is willing to purchase seven seers of ghee at the same price and therefore his demand for ghee at five rupees a seer increases from five seers to seven seers. This kind of increase in demand is different from the increase in demand due to a fall in price and is called intensification of demand. If the price of ghee increases to six rupees a seer, instead of demanding four seers, he will now demand six seers and his demand will be intensified at that price. Similarly at seven rupees a seer he will demand five seers of ghee. If the price of ghee falls to four rupees a seer he will demand more than seven seers i.e., eight seers and at three rupees a seer his demand will be nine seers. There-

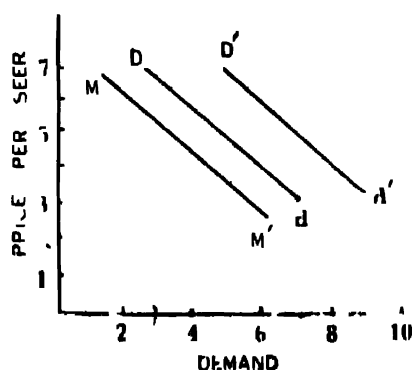
fore with a change in the circumstances of the consumer his demand schedule also changes. Both the demand schedules of the consumer are given below.

| Price of ghee per seer | Quantity of ghee demanded per month. (Before the family became rich) | (When the family became rich) |
|---------------------------|--|----------------------------------|
|---------------------------|--|----------------------------------|

| Rs . | seers | seers |
|------|-------|-------|
| 7 | 3 | 5 |
| 6 | 4 | 6 |
| 5 | 5 | 7 |
| 4 | 6 | 8 |
| 3 | 7 | 9 |

When these demand schedules are plotted in the following diagram we find that the new demand curve $D'a'$ moves to the right.

But even in the new demand schedule or the demand curve we find that with an increase in price the quantity de-



manded decreases and with a decrease in price, the quantity demanded increases and these changes take place in accordance with the law of demand. An increase in the income

of the consumer resulted in the intensification of demand and therefore the new demand curve $D'd'$, moved to the right. Intensification of demand also takes place when a commodity is used as a substitute for another commodity. When there is an increase in the general level of prices due to over-issue of paper money, prices of articles of food also rise and people generally reduce the consumption of superior food grains like wheat and rice and increase the consumption of inferior food grains like jawar, and bajra and therefore in spite of the increase in prices of inferior food grains, their demand increases i.e., their demand is intensified. Similarly when a commodity comes into fashion, its demand is also intensified; even with an increase in price, a greater quantity of that commodity is demanded than would have been the case before. But it may be noted that in all the cases of intensification of demand, in spite of changes in demand schedules and demand curves, the law of demand continues to operate.

An increase in demand for any commodity may take place in two ways. The demand for a commodity may increase with a decrease in price or it may increase as a result of a change in the circumstances of the consumer. When an increase of demand takes place as a result of the decrease in price it is called *expansion of demand* and when the increase in demand is due to a change in the circumstances of the consumer it is called *intensification of demand*.

When people become poor due to a decrease in their income they try to readjust their expenditure on different commodities and without any change in price their demands for various commodities decrease. At the same price less quantity of a commodity is demanded. Such a decrease in demand also takes place when a commodity goes out of fashion or it is substituted by any other commodity. In all these cases, the demand schedule for a commodity changes and the demand curve moves to the left as shown by the curve MM' in the figure. To distinguish such decreases in demand due to changes in the circumstances of the consumer from the decrease in demand due to an increase in price, we call the former decrease in demand *weakening of demand*. The demand for a commodity is said to be weakened when a smaller

quantity of it is demanded at the same price and the demand curve moves to the left.

It may be noted that intensification and weakening of demand are not the results of changes in price of any commodity, but they are mainly due to the changes in the circumstances of the consumer and they may ultimately bring about changes in the price of the commodity.

ELASTICITY OF DEMAND

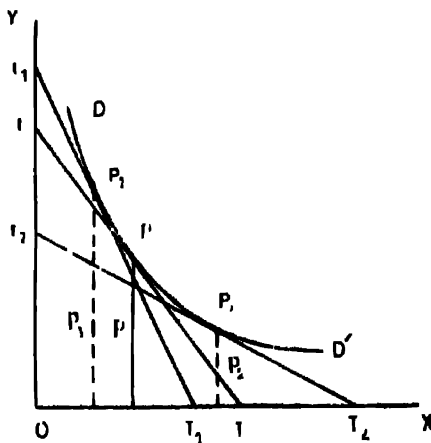
From the law of demand we find that with an increase in price of a commodity its demand decreases and with a decrease in the price its demand increases but it does not tell us by how much the demand changes. In fact for a given change in price the demand for a commodity changes differently for different persons. The capacity of the demand to change with the slightest change in price is called the elasticity of demand. A rough and ready method of comparison of elasticities is indicated below. An elasticity of demand for a commodity is said to be one when with an increase in price, the amount of money spent by the consumer remains the same. In this case the demand for a commodity changes in such a way that the quantity of the commodity multiplied by its price gives a constant figure. If with an increase in price the amount of money spent increases, the elasticity of demand for the commodity is less than one and if with an increase in price the amount of money spent decreases, the elasticity of demand for the commodity is greater than one.

Suppose the monthly demand schedule for wheat for a middle class family is as follows:

| Price per seer | Quantity demanded in seers | Total amount of money spent |
|----------------|----------------------------|-----------------------------|
| -/8/ | 25 | Rs. 12/8/- |
| $e > 1$ -/7/- | 30 | Rs. 13/2/- |
| $e = 1$ -/6/- | 35 | Rs. 13/2/- |
| -/5/ | 38 | Rs. 11/14/- |
| $e < 1$ -/4/ | 40 | Rs. 10/-/- |

From this demand schedule we find that when the price of wheat is four annas a seer, the quantity demanded in a month is 40 seers and the amount of money spent is Rs. 10/- When the price increases to five annas the amount of money spent is Rs. 11/14/- and therefore the elasticity of demand for wheat at four annas per seer is less than one. When the price of wheat is six annas a seer, the amount of money spent is Rs. 13/2/- and this amount remains the same when the price increases to seven annas per seer. Therefore the elasticity of demand for wheat at six annas a seer is equal to one. When the price of wheat increases to eight annas a seer, the amount of money spent decreases to Rs. 12/8/- and therefore the elasticity of demand at seven annas per seer is greater than one.

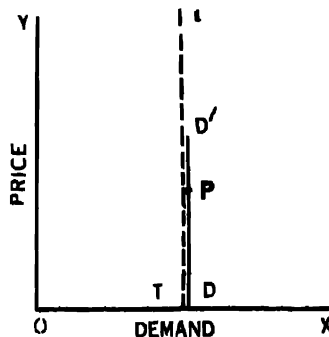
This, however, is vague and does not give us an accurate measure of the exact degree of elasticity at a particular price. Nor does it tell us even roughly or vaguely the behaviour of elasticity at a price when the tendency is for the price to fall rather than go up. And then elasticity of demand, by definition is to be studied with respect to the slightest change in the price rather than to any change big or small that takes place inside the market. Elasticity of demand at a price is



obtained by regarding that change in demand which would occur when the price in question, P , either goes up or falls by an infinitesimal amount. It is measured in the following manner.

find out elasticity at P . Like before we draw a tangent at P and let it touch the X and Y axes at T and t . We can easily see that this tangent never touches the X -axis which in mathematical language is expressed by saying that the line in question touches the X -axis at infinity or the distance between P and T is infinite. Now if we divide TP by tP , tP being a finite distance and TP being infinite, the result would be infinity. And so elasticity at P would be equal to infinity. And whatever be the point at which we want to measure elasticity in this curve, the result will ever be infinity for in all cases the distance of the tangent between the point in question and the X -axis will be infinite and the distance between the point and the Y -axis will be finite. And so the result of the division of the former distance by the latter will ever be infinite.

The opposite will happen when the demand curve is vertical. For here, though the distance of the tangent between P and the X -axis will be finite, that between the P and the Y -axis will be infinite. If then we divide the former distance by the latter and that is what gives elasticity, the result would throughout be zero.

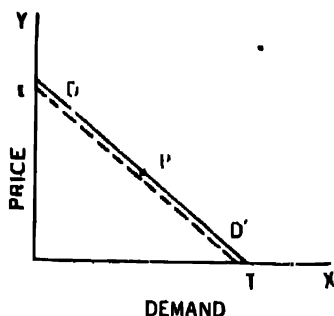


Perfect competition is characterised by a horizontal demand curve and perfect monopoly by a vertical one. We can thus say that elasticity of demand in conditions of perfect competition is infinite; in conditions of monopoly it is zero.

An interesting result which corresponds so much to reality will be found if we study behaviour of elasticity of demand

in the following demand curve in the form of a sloping straight line.

Whenever on this curve we draw a tangent, the tangent will become identical with the straight line itself. And the two points T and t will coincide with D' and D . At any point P which falls in the middle of DD' , the elasticity of demand



will be equal to one. For TP/tP will be equal to PD/PD' and since P is the middle point of DD' and therefore $PD = PD'$, TP/tP will be naturally equal to one. At any point P_1 which is lower than P on the curve, the elasticity will be lower than one, for TP_1 being less than TP and tP_1 being greater TP_1/tP_1 will be necessarily less than TP/tP , and therefore less than one. And as P_1 recedes further from P towards the X -axis, TP_1 will become smaller and smaller whereas tP_1 will become greater and greater so that TP_1/tP_1 will become smaller and smaller than TP/tP and therefore smaller than one. Thus the smaller the price, and this is what is indicated by the movement of P_1 towards the X -axis, the greater will be the tendency for elasticity of demand to be less than one or which is the same thing, the greater will be the tendency for demand to be inelastic.

The opposite will happen when prices are higher and P_1 has a tendency to move on nearer to the Y -axis beyond P . For then TP_1 will become greater and greater than TP and tP_1 will become smaller and smaller than tP so that TP_1/tP_1 will become greater and greater than TP/tP and hence greater than one. Thus when prices are high demand is greatly elastic. In the middle, of course, as we saw, when the price is neither very high nor low, demand will neither be highly elastic nor

inelastic but only moderately elastic. This result fits in so very well into the scheme of things as it happens to be. Nor will this result be very greatly falsified if we choose curves rather than straight lines. For in quite a lot of curves, elasticity is roughly high at high prices and roughly low at low prices.

We generally find that the elasticity of demand for the same person for any commodity is greater than one at a high price and is less than one at a low price and is equal to one at a moderate price. At the ruling price we can always divide the commodities consumed by an individual into three classes in accordance with their elasticities of demand. We put under one class those commodities on which greater amount of money is spent with an increase in the price. These commodities we may call necessities. We put under another class those commodities on which the same amount of money is spent with an increase in the price. We may call these commodities articles of comfort. We put under a third class, all those commodities on which less is spent with an increase in price. We may call these commodities articles of luxury. We can, therefore, say that necessities are those commodities whose elasticity of demand is less than one; comforts are those commodities whose elasticity is equal to one and luxuries are those commodities whose elasticity is greater than one.

We have seen that the same commodity has elasticity less than one at a low price and greater than one at a high price and therefore, it is considered as necessary at low price and luxury at high price. At a given price the same commodity may have an elasticity greater than one for poor persons, and less than one for rich persons and therefore it is an article of luxury for poor persons and an article of necessity for rich persons. The elasticity of demand gives us a good basis for classifying commodities into necessities, comforts and luxur

CHAPTER XIII

CONSUMER'S SURPLUS

~~The difference between the total utility of a commodity and the total utility of money paid for it is called "consumer's surplus". Expressed in terms of money it is the difference between the amount of money a consumer would have spent on a given amount of the commodity rather than go without it and the amount of money actually spent by him. Expressed symbolically,~~

$C. S. = T. U. \text{ of the commodity} - T. U. \text{ of the money parted for it}$, where $C. S.$ is consumer's surplus, and $T. U.$ is total utility.

For calculating the consumer's surplus in terms of money the formula is

$$C. S. = X - P \times Q.$$

Where X is the amount of money the consumer would have spent for the given amount of the commodity rather than go without it, P is the price of the commodity and Q is the quantity of the commodity purchased.

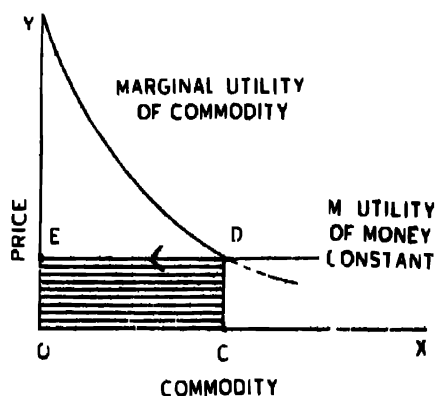
Suppose the marginal utility of oranges to an individual is as follows:—

| Number of oranges | Marginal utility |
|-------------------|------------------|
| One | 10 |
| Two | 8 |
| Three | 6 |
| Four | 4 |
| Five | 3 |
| Six | 2 |

Now the marginal utility of oranges when six oranges are bought is 2 and this should also be the marginal utility of price parted for the oranges. Let each orange cost 2 as,

The marginal utility of 2 as. parted for the 1st orange is obviously 2. If the utility of all the 2 as. that have been parted for the six various oranges continues to be 2, the total utility parted by the consumer is $6 \times 2 = 12$. This indicates his loss of utility. His gain of utility is indicated by the sum of the various amounts of utilities he gets out of six oranges which is $(10+8+6+4+3+2)$ i.e. 33. Consumer's surplus would be indicated by the difference between the total utility of the commodity and the total utility of money parted for that commodity, the total utility of money being just a multiple of marginal utility of price by the units of commodity purchased. This, however, should be kept in mind that this statement is made on the assumption that all the 2 as. bits spent on the oranges involve the purchaser in the same amount of loss of utility i.e. 2 which happens to be the utility of the last bit spent. If the first 2 as. bit involves the consumer in a greater loss of utility, and the other bits also lead to a greater loss, the consumer's surplus would evidently be different. The two cases can be represented diagrammatically in the following manner.

Case I. When the loss of utility involved in parting with successive bits of money is the same, i.e., in common economic phraseology, when the marginal utility of money is constant.

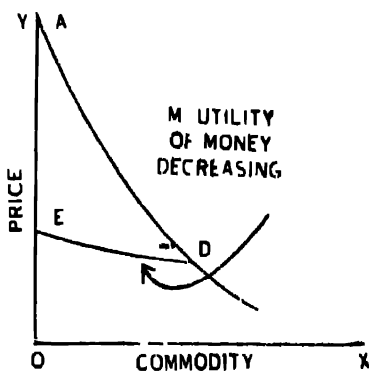
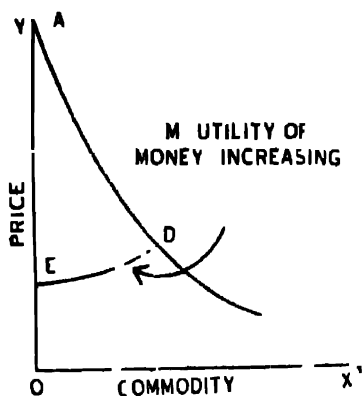


In such a situation multiplying marginal utility of money by the bits of money contained in price is the same thing as multiplying marginal utility of commodity by the number of units purchased.

CORD represents total gain of utility from the commodity. *COED* represents total loss of utility in parting with money for the commodity when the marginal utility of money remains unchanged. $CORD - COED = DEY$ represents net gain or consumer's surplus.

Case II. When the loss of utility involved in parting with successive bits of money is not the same, i.e., in common economic phraseology when the marginal utility of money is not constant. Two possibilities can be evident here. Either with increase in purchases the loss or sacrifice of utility in parting with successive bits of money increases or it goes down.

(i) If the loss of utility in parting with successive units of money increases. This is a more realistic picture.



Here again consumer's surplus is given by *DEY*. But we can see that it is not the same as *DEY* of the former diagram, it is less.

(ii) If the loss of utility in parting with successive units of money decreases. (This is possible in theory only.)

Here again consumer's surplus is given by *DEY*. But we can see that it is not the same as *DEY* of the first diagram, it is greater.

Criticism of consumer's surplus

The concept of consumer's surplus is a product of the fertile brain of Dr. Marshall. The reactions to this concept have been most violent. While some economists have criticised it in most damaging terms, others have accepted it with their fullest support. The most vehement critic of consumer's surplus has been Prof. Nicholson, a contemporary of Prof. Marshall. The following are the most important points of criticism:

1. Prof. Nicholson says that the whole doctrine is 'hypothetical and unreal' and if it is applied to real problems it will give an entirely erroneous result. Taking an illustration he says : suppose a man is very hungry and wants food to eat. He is willing to spend £100 for it. But if he gets it in £10, he gains a surplus of £90. Similarly he gets a surplus of £200 from his house, £80 from his clothings and so on. "Of what avail is it", he points out, "to say that the utility of an income of (say) £100 a year is worth (say) £1,000 a year?"

But the usefulness of this doctrine can be realised if we, as Marshall has pointed out, compare the conditions in South Africa and, say, London. A man can get a number of amenities of life in London which are not available in South Africa. Consequently a man even when he spends £1,000 in South Africa shall not be able to get as much utility as he can get by spending £100 in London. So by looking at the consumer's surplus which people derive at different places, we can find out their stage of economic development.

2. Another criticism is that as a man goes on spending more and more, the utility of money goes on increasing. No attempt was made by Marshall to take this fact into consideration while measuring consumer's surplus.

This criticism shows confusion in the understanding of the concept of consumer's surplus. The concept of consumer's surplus is based upon the Law of Diminishing marginal uti-

lity which assumes one point of time. It is only at one point of time that incomes and tastes etc., remain necessarily constant. We can either suppose that the marginal utility of money for this point of time is constant or it is decreasing or it is increasing. And corresponding to what we suppose there is a certain measurement of consumer's surplus. Thus the consumer's surplus doctrine need not be criticised if it does not apply to various points of time which 'spending more and more' in real life involves. For to these various points of time taken together even the Law of Diminishing marginal utility may not apply. Instead of the utility of further units of the commodity obtained 'by spending more and more' going down it may as well go up because changes might have occurred in the consumer's tastes and income during the moments lying between the successive points of time corresponding to successive spending by the consumer.

3. It has been pointed out that the total utility of two commodities which are partial substitutes to each other is together greater than their separate utilities added together. For instance, tea and coffee are substitute. If a man gets neither coffee nor tea, the disutility to him may be, say, 100. But the disutility of not having tea may be, say 40 and of coffee, say, 50. In this manner the total disutility is only 90.

But this difficulty can be overcome as Dr. Marshall says, by grouping together in one demand schedule those commodities which are substitutes for one another.

4. The difficulty of measuring consumer's surplus has been another ground on which it is criticised. It is pointed out that in case of necessities for existence the utility from the first unit of an article is unlimited and therefore, cannot be measured. Similar is the case with those commodities—like valuable diamonds—which have prestige value.

For estimating the consumer's surplus, it is necessary to have a complete demand schedule of a commodity. It is pointed out that a complete demand schedule for any commodity is highly conjectural except at ruling prices and the consumer's surplus based on the hypothetical demand

schedule can also be only highly conjectural. But that does not mean that consumer's surplus cannot be measured. And then it may be noted that the difference in consumer's surplus can be approximately measured if the demand schedule at ruling prices is given. It is this difference in consumer's surplus, which is of practical importance in determining the effects of changes in prices on different classes of people.

Further it is pointed out that the utility of money differs from person to person. As such consumer's surplus of one cannot be compared with that of the other. Again their sensibilities and the intensity of their desires also differ. Consequently consumer's surplus of one cannot be compared with that of another.

From this criticism it can be concluded that most of the arguments are against what they would call the 'correct measurement' of consumer's surplus. No weighty arguments have been advanced against the doctrine of consumer's surplus. And if the consumer's surplus cannot be correctly measured, this is not due to any peculiarity of the concept itself. It is entirely due to the fact that we do not have any correct measurement of utility in our science. So it can be safely said that the doctrine of consumer's surplus is perfectly correct. Only it has some limitation on the ground of the measurability of this surplus.

Advantages of consumer's surplus

The following are the most important advantages of consumer's surplus:

(1) By looking at consumer's surplus we can compare the economic development of one country with that of another. The higher the consumer's surplus the more advanced a country is.

(2) By looking at it a monopolist can increase or decrease the price of his commodity so as to obtain maximum monopoly revenue.

(3) By looking at it the Government can also adjust its tax-structure. Every tax involves a reduction in consumer's surplus. The tax system should be so adjusted as to bring about the least reduction in consumer's surplus compatible with the object in view.

(4) By looking at it the economist can find out and compare the conditions of different sections of the people at different times and in different countries. They can also find out whether their standard of living is decreasing or increasing. A higher standard of living will yield a greater consumer's surplus.

(5) By estimating the difference in consumer's surplus due to a change in price, the effect of a given change in price of any commodity on different classes of people can be definitely known and compared.

PLANNING OF FAMILY EXPENDITURE

Every person attempts to follow the law of equi-marginal utility in spending his money on different commodities. People are generally short-sighted; they do not consider the effect of the consumption of a commodity on their efficiency in the long run and spend money on those things which have a great immediate utility for them but which have very little of that element which gives them contentment. The object of planning family expenditure, naturally, is to make the best use of one's income, considering both the short period and the long period effects. By the proper planning of family expenditure, extravagance and recklessness in expenditure can be checked and waste of money can be avoided.

It is necessary to have proper accounts of the expenditure of the family during the last month or year to enable us to prepare a list of commodities divided into necessities, comforts and luxuries. With this list before us allotment of expenditure on each of these commodities has to be made for the next month after carefully considering the proper utility of the last rupee spent on each item. Before this work of allotment is begun, it is also necessary to estimate the income of the family for the next month because we are required to regulate our expenditure in accordance with our income. Every family should try to live within its means and should not allow its ordinary expenditure to exceed ordinary income in any case. If expenditure is greater than income, money has to be borrowed and borrowing for ordinary consumption is most undesirable. A person who falls into the clutches of a money-lender to meet his ordinary expenses finds it extremely difficult to get out of it during his life-time and thus loses all opportunities of self-development and progress. Every person should set apart some amount of money from his monthly income to meet unforeseen expenses during sickness or absence from work. If a person is contributing to a provident fund or is adequately insured, he has a compulsory saving and he may not make any separate provision for further saving. But those who have no such facility should keep apart every month a part of their

income, say 10 per cent, in a separate fund to meet their requirements if they should fall upon evil times. Then the head of the family should make adequate provision for the payment of taxes, if any, to the Government and for spending money on charity for the good of others. Charity encourages people to consider the interests of others as their own and, therefore, it develops high thinking which leads to contentment and peace of mind. But charity should not be misdirected. The able-bodied persons who are capable of doing work, but do not work, should not be helped. The best form of charity is for providing facilities of education and training to enable young men to increase their efficiency as producers. Provision of necessities of existence to disabled persons is also desirable. Provision of works of permanent utility such as parks, libraries, hospitals, wells, dharamshalas and the like should also be encouraged. If no provision is made for charity in the beginning, very likely, in the end of the month, no money will be left for this purpose. Therefore, allotment of expenditure on necessities, comforts and luxuries should only be made after adequate provision has been made for saving, taxes and charity.

As sometimes the satisfaction obtained from the expenditure on conventional necessities is not of the proper type, expenditure should be readjusted for the next month and less amount of money should be allotted to conventional necessities and more money should be allotted to necessities for existence and necessities for efficiency. In fact, effort should be made not to allot any expenditure on articles of luxury till the requirements of necessities for efficiency are fully met. In this way in the beginning of the month every family should have a budget of expenditure and every effort should be made by the head of the family to incur expenditure during the month in accordance with their allotments. If a deliberate effort is made with a firm determination, success is sure to follow and there will be progressive reduction of expenditure on conventional necessities and luxuries and there will be progressive increase of expenditure on necessities of existence and necessities of efficiency and even without an increase in income, the family would derive the maximum utility or satisfaction from its expenditure in the long period.

CHAPTER XV

THE STANDARD OF LIVING

The standard of living of any class of people should be judged by the quantity and quality of goods consumed by an average family of that class and the relation between the satisfaction obtained and the state of happiness of the class concerned within a given period of time. It is a relative idea and is generally used for comparing the well-being of the same class of persons at two different places or of different classes of people at the same place or the same class of people at two different times. As the commodities consumed by different classes of people are of different kind and quality, the satisfactions may be different. And so the comparison in real life is generally made in terms of money, care being taken to make due allowance for a difference in the general level of prices at two different places or during two different periods of time. If we find that an average family of a labourer in Allahabad was spending twenty-five rupees per month on different commodities in 1939 before the great war and is now spending in 1948 fifty rupees per month, we would not be justified in concluding that the standard of living of the labouring class had doubled because there has been a general increase in the level of prices during this period and with fifty rupees in 1948 he is not in a position to purchase as much as he used to do with twenty-five rupees in 1939. Therefore, in spite of spending a large amount of money, his total satisfaction may be less than before if the rise in prices is more than 100 per cent. Similarly, if one family is spending Rs. 40 per month in the rural areas and another family, belonging to the same class, is spending Rs. 60 in a city, we cannot definitely say that the total satisfaction of the family in a city is higher until we make a proper allowance for difference in the level of prices in the city and the rural area.

For estimating the standard of living of any class of people, it is necessary to collect family budgets of a few representative families belonging to that class. Representative families should be selected by the method of random sampling as far as possible. Investigators should try to gain the confidence

of the heads of families selected by them and should see that the record of every expenditure is properly kept. Investigations carried on in India both by official and non-official agencies clearly show that the standard of living of a vast majority of people is extremely low. It is so low that crores of people are living in a semi-starved condition with insufficient clothing and inadequate shelter. Increase in their standard of living is absolutely necessary to enable them to have minimum necessities for existence. It may be noted that the increase in the standard of living is not inconsistent with simple living. A higher standard of living is always desirable for all classes of people if the money is wisely spent. If the consumption of intoxicating drugs and liquors increases and the standard of living is thus raised, the efficiency of the consumer ultimately decreases and such a rise in the standard of living is not desirable. A rise in the standard of living should lead to a rise in the standard of life, i.e., increased quantities of goods should be consumed in a way that would lead to an increase in efficiency. It is only when the expenditure is properly adjusted to the requirements of efficiency or when more money is spent on necessities for existence and efficiency and less is spent on conventional necessities and luxuries that a rise in standard of living has a beneficial result. A higher standard of life is always desirable for all classes of people and our standard of living should be so adjusted as to bring about a rise in the standard of life.

It is admitted by all that the standard of living of a vast majority of people in India is extremely low and if we are anxious to have economic progress in our country it is absolutely necessary to raise the standard of living of all the classes of people, particularly, the poorest. For this purpose, we have to increase the income of the people by bringing about rapid increase in the production of wealth in the country. Improvements in agriculture, development of cottage industries and industrialisation of our country in accordance with a definite plan could result in doubling the production within a period of ten years. But the increase in wealth should be so distributed as to enable those who have the smallest income to get the largest share of the increased produce to enable them to have opportunities for raising their standard of living. At the same time efforts should be made by the government

to provide more facilities for education and industrial training so that young men may have their efficiency increased. A rise in the standard of living cannot be permanent until the capacity of the consumer to produce more wealth is also permanently increased. Travel and emulation are other means of raising the standard of living and more facilities for travel at low rates should be provided by the government. Lastly, care should be taken by the consumer to spend his increased income wisely. Then the rise in standard of living will be accompanied by a rise in the standard of life and the people will be more contented and happy.

PART III

Production

CHAPTER XVI

FACTORS OF PRODUCTION

Man has wants and they cause him pain so long as they are not satisfied. But when they are satisfied this pain is removed and consequently he experiences what in common language is called pleasure. He therefore tries to satisfy as many wants as he can. He cannot, however, satisfy any of his wants unless he makes an effort to produce or procure goods or services that constitute the object of his wants. Activities which are directed to the production of goods are therefore caused by scarcity. If there were no wants there would be no activity on the part of human beings and consequently no production. Production is, therefore, the result of human activities directed to the production of goods and services. But the motive force behind all production is the need or the wish to satisfy wants. Consequently, it appears that 'production' is the effect and 'consumption' the cause of every human activity.

As we know, man can not create matter just as he can not destroy matter. He merely changes its form or place in order to make it more useful. Thus when he produces bricks he changes the form of earth with the assistance of fire etc. Similarly when he carries these bricks from the kiln to the place where a house is to be constructed he makes them more useful by carrying them from a place where they are less useful to a place where they are more useful. (The usefulness of a commodity or service or the capacity which it possesses to satisfy human wants is known as utility.) Thus human activities merely increase or decrease the utility which a commodity possesses by changing its form, location etc. Production, therefore, is the creation of extra utility*. On the

*From one point of view, production may be considered to be the result of an activity rather than an activity itself. This distinction, however, is not of much practical or theoretical importance. It should alone be noted that we are only concerned with an increase of utility as a result of human activity. If a bird collects grain to feed its offspring it does create 'extra utility' for itself and for its offsprings but it is not production since Economics studies human activities only. But if the said bird collects grain under the direction and training of a human mind to satisfy a human want it becomes production because in that case the extra utility is produced by human activity though assisted by a bird.

otherhand, consumption implies a reduction in existing utility. When a baker produces bread he creates extra utility inasmuch as the utility of the bread is more than that of flour, fire etc. On the other hand, when a man consumes bread he reduces its utility. A question that arises in this connection is that when a man consumes bread, is he not producing energy? Or when he produces a shirt, is he not consuming cloth? In the former case the utility of energy is more than that of bread and in the latter case the utility of cloth is less than that of the shirt. Production, therefore, is an act which leads to increasing utility just as 'consumption' leads to diminishing utility. But the activity may be the same—it can be looked at from 'production' and consumption points of view. Or it may be said that every activity has two aspects—the production aspect and the consumption aspect. When it is looked at from the point of view of increase in utility the activity is called 'production.' But when it is looked at from the point of view of decrease in utility the activity is called 'consumption'. When we look at the activity of eating bread from the point of view of the decrease in the utility of bread we call it a consumption activity but when we look at the same activity from the point of view of increase in energy, which has more utility than bread, we call it a production activity. Thus we see that every human activity has a production as well as a consumption aspect. When it is looked at from the point of view of satisfying a want—eating bread to satisfy hunger—it is consumption and when we look at it from the point of view of a means to an end—eating bread to produce energy—it is production. The direct satisfaction which an activity gives makes it an act of consumption and the indirect satisfaction which it gives—producing energy in the case of eating bread—makes it an act of production. Consumption is in the present as we are concerned with the direct satisfaction which is felt simultaneously with the performance of an activity. Production, on the other hand, is referable to the future since an indirect satisfaction is the reflection of some satisfaction located in the future.

It is pertinent to pause here and think whether there is strictly speaking any activity which is consumption, since consumption implies decrease in utility. Are not all activi-

ties performed with the object of increasing utility? Surely so, because a rational human mind cannot reconcile itself to the performance of an activity whose object is decrease of utility. Therefore strictly speaking all activities are production activities, consumption being just some direct satisfaction that we derive in performing an activity. The final aim of every human being is to achieve maximum happiness and so every activity is a means to an end—a means of giving indirect satisfaction through the process of increasing utility. A man produces wheat to produce flour—to produce bread—to produce energy—to produce happiness and so on. Thus the aim of every activity is to effect increasing utility and hence every activity is production. Though this is true it is yet necessary to maintain the distinction between production and consumption because every activity can be looked at from the point of view of satisfying a want *directly*. Also because it is necessary to emphasise the importance of satisfying wants. If there were no wants to be satisfied there would be no activity and hence no production. It is important to note here that human activity never comes to an end because a man is never able to produce enough to satisfy all his wants once for all. Wants are far too numerous to be satisfied with the resources at his disposal. If resources are increased wants increase more rapidly because the very act of increasing resources gives rise to fresh wants. Besides, wants that are once satisfied reappear. If a man's want for food is satisfied by eating bread then the problem does not end there because hunger reappears after some hours. There is a continual chain of activities leading to the satisfaction of some wants, which in turn give rise to fresh wants and new activities. On the other hand, we notice a perpetual conflict between man's activities to increase his resources and the ever-increasing number of wants he wishes to satisfy.* It is obvious that in this conflict wants, unless they are deliberately controlled and restricted, will always outstrip his resources because they multiply more rapidly than resources can. And thus the motive force behind all production—the need or the wish to satisfy human wants—will always remain

*Prof. J. K. Mehta maintains that the way out of this perpetual conflict is the attainment of the stage of wantlessness. For a brilliant exposition of this view see his 'Advanced Economic Theory', Chapter I.

so long as the human race exists. So we conclude that production activities will have to be performed by men so long as they live. And that will be true in all circumstances, for even though wants might be rigidly controlled, they cannot be completely eliminated howsoever desirable that may be.

Factors of Production

Any thing that assists production is known as a factor of production. A thing that *exists* is not necessarily a factor of production, it becomes a factor of production only when it actually *assists* production. If we are considering the production of boots in a factory then a cotton spinning machine in a textile mill or the exertion involved in delivering a lecture in a class-room is not a factor of production as it does not assist the production of boots. Factors of production can broadly be classified under two heads:—(a) human exertion and (b) concrete objects including animals and natural elements. The forces which human exertion provides to assist production are sub-divided into Labour, Organisation and Enterprise. On the other hand, concrete objects or forces other than human exertion that assist production may be called capital*. The person who supplies any of these factors of production is known as an agent of production. Thus the agents of production are Labourer, Organiser, Enterpriser, and Capitalist. The services rendered by these agents of production are known as their functions of production. Thus the function of a labourer is to provide physical exertion, while that of an organiser is to provide mental exertion. The enterpriser provides risk-taking and the capitalist provides waiting, that is, he postpones the consumption of a commodity or object that assists production and waits to consume it in the future.

Human exertion

The assistance which human exertion provides to production is classified under labour, organisation and enter-

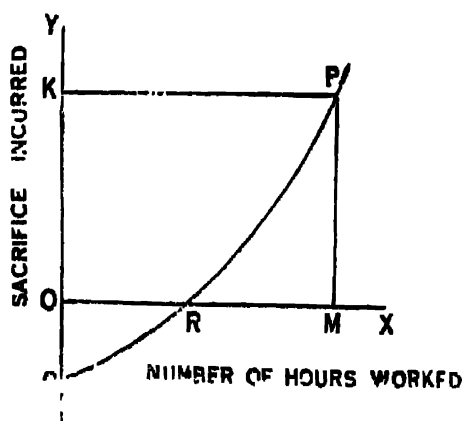
*Capital includes agricultural soil also. For a full discussion on land and capital see next Chapter.

prise. Marshall says, "By labour is meant the economic work of man, whether with the hand or the head"*. It will be seen that Marshall includes every type of human exertion that assists production in "Labour". There can be absolutely no objection to such a classification but for further analysis of the types of human exertion that assist production and for the study of the different problems associated with them it is necessary to sub-divide this human factor. At another place Marshall defines labour as "any exertion of mind or body undergone partly or wholly with a view to some good *other than the pleasure derived directly from the work*"**. Marshall rightly excludes the direct pleasure derived from the work from 'labour' because this *direct* pleasure is consumption and cannot therefore be a factor of production. It will however be seen that Marshall includes "exertion of mind or body" under labour. In that case organisation or enterprise would not be separate factors of production. This is undesirable as Marshall himself probably for the first time differentiated Labour from Organisation. We will, therefore, define labour as physical exertion of human beings that assists production. Their mental exertion undertaken to assist production is organisation. The function of a labourer is to provide physical exertion to assist production. But, what is his sacrifice ? The sacrifice consists in foregoing the use or enjoyment of something that one likes. If one likes eating oranges but if one abstains from doing so one's sacrifice consists in foregoing the pleasure which one would have derived if one had eaten oranges. Similarly when a labourer provides physical exertion he foregoes physical rest or leisure and that is his sacrifice. No one likes sacrifice for its own sake. The labourer sacrifices physical rest in lieu of a reward which is called wages. Sometimes a person may not like physical rest and may on the contrary enjoy physical work. In that case his exertion cannot be called labour. For the work then becomes pleasurable in itself. As a matter of fact human nature dislikes idleness as much as over-work. No one likes idleness all the time. If idleness, that is absence of all work, was thrust upon a man he would soon find it probably as irksome as continued work. Even the

* Principles of Economics 8th edition (1938) p 138

** *ibid*, page 65. Italics mine.

most monotonous type of operations in a factory that a worker has to perform are enjoyable to him for a short while in the beginning. This can be clearly seen when a person has been absent from his work for a very long time. He then feels an internal urge to do some work and really feels happy in being able to resume work after a long absence. It is true that the duration of the period during which one enjoys one's work varies from person to person and depends upon the environments and the type of work done. A person who is temperamentally lazy begins to feel the irksomeness of work much earlier than another who is more active by nature. Whether work is irksome or enjoyable the man who does it earns a remuneration. In the one case it is payment for the sacrifice of physical rest or leisure. In the other it is not a payment for any such sacrifice. It might be called a free gift; for the worker incurs no cost since he makes no sacrifice. From the point of view of the employer it makes no difference whether the man enjoys his work or not. The employer can make no distinction between work that is enjoyable and that which is not. What actually happens is that as one goes on working one gets more and more tired, and consequently the work becomes more and more irksome. His sacrifice curve is somewhat as under :—



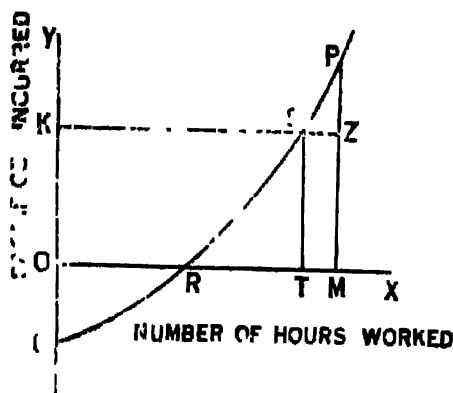
If along OX we measure the number of hours worked and along OY the sacrifice incurred then QP is his sacrifice curve. Till OR hours of work he enjoys the work and consequently incurs a negative sacrifice as it were. After the point R is reached work begins to be irksome and the irksomeness goes

on increasing. He goes on working till his marginal sacrifice PM is equal to the rate of payment. His total earnings are therefore equal to $OMPK$, the payment he gets, plus OQR , the pleasure he enjoys. Out of this his sacrifice or cost is PRM . He must get this if he is to work OM hours. The balance KQP is a surplus above cost which accrues to him because all his work is paid at the same rate at which the last hour of work, which is the most irksome, is paid.*

Organisation.

The mental exertion of a person that assists production is called organisation. The function of the organiser is to supply mental effort. His sacrifice is mental rest. But if he likes or enjoys mental effort then he makes no sacrifice and the payment he gets is a surplus above cost.**

* The above analysis holds good even if work is demanded in units of 7 or 8 hours as in a factory or in monthly or yearly units of 5 or 6 hours a day as in Government service. In such a case it is possible that the last hour or two may cause greater sacrifice than the rate of payment, i.e., the curve may be as under:—



The rate of Payment is ZM . In this case the worker would not like to work beyond T because thereafter payment is ST but sacrifice is greater than ST . Since, however, the unit of work is OM the choice is to work OM hours or rest. In such a case he would like to work rather than rest so long as his earnings ($OMZK + OQR$) are greater than his sacrifice (PRM).

** See discussion above which applies here as well.

The organiser earns a salary just as a labourer earns wages. It is necessary to emphasize here that if labour and organisation are defined as above then every worker becomes both a labourer and an organiser. For, every physical exertion involves mental work and every mental exertion involves physical work*. Mental work without any physical exertion is impossible. When a man works mentally he also gets physically tired or at least feels the physical strain as well. Similarly, no physical exertion is possible without some degree of mental work, howsoever small it may be. The worker who shifts a table or lifts a stone may appear to be doing physical work only. But in reality his work needs mental guidance. Without directions from the mind the work would not be properly aimed at the final objective. Thus when a worker is asked to lift bricks he can do this work only if his physical exertion of lifting bricks is directed by the mind. Our analysis therefore enables us to trace the organiser in the labourer and the labourer in the organiser. It shows that the so-called labourer in a factory provides both labour and organisation just as the manager supplies both these factors of production and therefore both of them earn wages and salaries. The only difference is that the so-called labourer combines in his work a greater proportion of physical exertion and only a small quantity of mental exertion. Whereas the manager combines a comparatively greater proportion of mental exertion with physical exertion. Though both may work for equal hours yet the manager earns usually more because mental work is paid at a higher rate. The reason is that mental work is probably more exhausting or it has a higher cost in education and training etc. And the difference in the earning persists because the supply of mental exertion is more scarce in comparison to its demand whereas the supply of physical exertion is less scarce in comparison to the demand for it. If we want to increase the earnings of physical exertion as compared to the earnings of mental exertion we should increase the supply of the latter at the cost of the former. This means that education should be made universal so that the supply of mental exertion may increase. It is interesting to note therefore

* And thus we see that one person can supply a number of factors. He who is called a labourer may also be a capitalist an entrepreneur and an organiser.

that the spread of education tends to lessen the inequalities of earnings of different persons.

The above division of the human factor in production is made on a functional basis i.e., according to the functions it performs. If we think of a man's mental work he is an organiser, just as he is a labourer when we think of his physical work. Modern economic theory recognises that there is no man or producer who earns only wages or only rent or only interest or only salary. The view that a man is a labourer or an organiser alone is a historical anachronism in economic theory. The older classification of factors of production which placed different human beings under different compartments is faulty and defective. When two men perform both physical and mental exertion how can we say that one is an organiser and the other a labourer? To classify human exertion that assists production exclusively into either 'labour' or 'organisation' is an evidence of loose thinking. It is unfortunate that most text books on Economics still stick to the old and obsolete classification. When a man performs both physical and mental exertion what is the criterion which calls at 'labour' in one case and 'organisation' in another. If the criterion is the proportion or percentage of mental or physical exertion to total exertion one naturally wants to know what proportion should mental or physical exertion bear to total exertion so that the work may be called wholly organisation or wholly labour. If you say 30 percent., then why not 35 or 40 or 70 or 90 or even 95 percent. The classical economists realised the importance of the man who brings together in the required proportion all the factors of production. This work of co-ordination requires such great tact and knowledge and is so vitally important that without it no productive activity is possible. This man is the moving force behind all production. In view of his importance they raised his work to the status of a separate factor of production, namely, organisation* not realising that

* It may be permissible to use the word 'organiser' for the person who brings together the different factors of production in the required proportion and is the main force directing production. But the above distinction is necessary in the interest of scientific exactness and clarity of thought.

even such a 'person had to exert physically also and in some cases provide capital and bear the risk or uncertainty associated with production.

Enterprise

Production always extends into the future and is conducted in anticipation of demand. A producer makes the best possible estimate of demand and then plans production on that basis. But when production has fulfilled its object, that is, succeeds in producing the service or commodity planned to be produced the demand may have changed. It may have decreased or increased due to various reasons, such as, changes in taste, fashion or income of the consumers. Where demand decreases the service or commodity may have to be sold at a price below the cost of production, thereby inflicting unforeseen losses on the producer. If these losses could have been foreseen production would have been planned differently. When however actual demand is found to be in excess of what was estimated unforeseen gains might accrue. In spite of best efforts to estimate the demand correctly the producer may find his estimates going wrong due to lack of sufficient foresight or knowledge of market conditions on his part or due to the expansion or contraction of demand as a result of forces which could not possibly have been foreseen. It is likely that his estimates of demand may be found to be correct yet there is the feeling of uncertainty in his mind that, after all, the estimates might turn out to be wrong and he might have to incur unexpected losses. This involves risk in production and some one must come forward to perform this function of risk-taking. Even if a producer thinks that he has succeeded in making estimates of demand which will prove to be correct there still remains risks of a different type. Production may fail to achieve the planned results, that is, the object of production may not be fulfilled due to bad planning or unforeseen accidents. While digging a well one may come across an impenetrable rock or the water may be unwholesome or the well may dry up after sometime. An author may lose the manuscript of a book when he is about to send it to the press or it may be lost in the press due to theft or fire.

Production, therefore, always involves some risks. There

must be some one to bear the losses arising from this risk. The man who does this is called the entrepreneur. His sacrifice consists in the foregoing of a feeling of certainty which everyone likes. He may be fairly certain of a gain in a particular act of production but behind this certainty there is always a feeling of uncertainty. The other factors of production are certain of their remuneration but the enterpriser is not. Enterprise is strictly speaking not a mental exertion in the ordinary sense of the word, though it has its seat in the mind—it consists in the consciousness of having shouldered the risks of production. Enterprise is an essential factor of production because some one must undertake the risk before production can be carried out. No one likes to have a feeling of uncertainty or insecurity in his mind.* The enterpriser foregoes the peace of mind which one enjoys when he is assured of a certain and secure income. Since he shoulders all the risks, the other agents of production are assured of fixed reward. This is the assistance he provides to production and for which he gets his remuneration.

This remuneration is always positive and forms a part of the cost of production. It is called 'profit'. But since production involves risks there may be unforeseen gains or losses as well. It is best to call them 'windfall'. They may be negative or positive. These windfalls accrue to the enterpriser because it is he who undertakes to bear the risks of production. It is not necessary that these risks should be borne by the capitalist or the person who brings together all the factors of production in the required proportion and directs the act of production. It is illogical to combine enterprise with any other factor of production. It is a completely distinct and separate factor of production.

It is important to remember that under static conditions,** there are no risks. For, the future is certain and does not vacillate. Consequently we need nobody to undertake risks, as they do not exist. The results of production are

*But a man may be of an adventurous type. He may like to take risk or at least some part of it. In that case he makes no sacrifice and his remuneration will be a surplus. Compare pages 109-111

** For a differentiation between static and dynamic conditions consult Prof. J. K. Mehta · Advanced Economic Theory Chapter 9.

certain and the demand conditions fully foreseen. We, therefore, conclude that enterprise as a factor of production exists under dynamic conditions only. Under static conditions, which is only a theoretical conception, there are only two human factors that assist production, namely labour and organisation.

Capital

Natural forces and concrete objects such as machines*, animals or commodities when they assist production are usually classified under Capital or Land. They include what is generally known as wealth, provided of course that they assist production. Capital is something exterior to man, it is a non-human factor of production and must therefore be in the possession of somebody. He who possesses it is known as the capitalist. When a capitalist provides capital he foregoes the present consumption of what he provides. He has the choice of consuming his wealth or of saving it. When he saves he foregoes consumption in the present and waits to consume it in the future. The function of a capitalist is therefore to provide 'waiting'. When one abstains from consuming a thing one is said to save it. Capital, therefore, is the result of saving. The sacrifice of a capitalist is that he foregoes present consumption. Everyone likes present pleasure to future pleasure of equal intensity. One may prefer future enjoyment to present enjoyment of equal intensity because of interest. Thus a man acts prospectively when he saves. He prefers to wait because waiting brings him a remuneration. Before anything can assume the role of capital it is preceded by an act of saving on the part of someone. Capital, therefore, accumulates as a result of sacrifice.

All factors essential

The above discussion makes it clear that production is the result of human exertion concentrated on capital including what the classical economists called Land. For any productive activity human exertion is essential. And every activity

* For the present Capital and Land as understood by the classical economists are treated as capital only. The distinction between them has been explained in chapter XVII.

requires both physical and mental exertion, as already explained. Enterprise also is an essential factor of production in the dynamic conditions of the world. Thus labour, organisation and enterprise are always needed for any act of production. It is impossible to produce anything without using all these human factors of production. But a question here arises as to whether human exertion alone can produce some commodity or service. In the production of material wealth or of goods and services it is obvious that human exertion must be applied to some concrete objects including the forces of nature. Even in such cases as the production of a song, the singer has to make use of space, air, etc. The forces or objects external to man that assist production in this fashion can be called capital. We may, therefore, say that all the factors of production—labour, organisation, enterprise and capital, are essential for production. Without a combination of all of them no production is possible. It is, however, not necessary that each factor should be supplied by a separate person. In fact as the foregoing analysis shows that is even not possible. The wealth produced is distributed between all the *factors* of production and does not go to so many persons. A person is a combination of many agents, that is, he performs many functions and consequently if we want to find out the earnings of a *person* which he derives from his contribution to a particular act of production we should add up the remunerations which he gets for the different functions he performs.

Characteristics of factors

It is a characteristic of manual work* that the supplier or seller of it must deliver it personally at the place where it is needed to assist production. It is inseparably associated with the supplier. This is not so with intellectual work,** enterprise or capital. It is true that like manual work, intellectual work and enterprise are most closely connected with the supplier of these factors yet they can be separated

* Manual work that assists production consists mostly of physical exertion (or labour) with a little of mental exertion (or organisation) that necessarily accompanies it.

** Intellectual work when it assists production is mostly mental exertion (or organisation) involving some physical strain as well.

from their sellers and delivered at the place where they are needed without the necessity of the seller delivering them in person at that place. A publishing house in Calcutta that wants to bring out a book may have the book written by an author residing in Allahabad. A plan to build a house in Kanpur may be drawn by an architect living in Bombay. Similarly steel is produced by the Tata Iron and Steel Co. Ltd. at Jamshedpur but the risk is borne by the shareholders spread out in different parts of the country. It is not necessary for these shareholders to be present in Jamshedpur to undertake the risks associated with the production of steel in the Tata foundries. The same thing is true of capital. The capitalist need not deliver it in person at the place where capital is needed to assist production. The owner of a machine or the supplier of funds may live thousands of miles away from the place where these are needed.

It is sometimes said that manual work or the so-called labour is perishable whereas other factors of production are not. If a worker does not sell his work or remains out of employment the time lost is lost for ever and cannot be recovered, though the rest which he thereby gets may enable him to conserve his energies and increase his efficiency and thereby his earnings in the future. This, however, is true of all factors of production. The time lost in having mental rest or intellectual unemployment is also not recoverable though it may be under certain circumstances conducive to better intellectual work later on. If the man who covers the risks of production is idle in the sense that he does not take any risks for sometime then he also loses his earnings, though it may be that he becomes a more adventurous risk-taker by such a rest. If a machine is allowed to remain idle so that it does not become capital (it becomes capital only if it assists production) it also loses its earnings during that period. In its case also such periods of rest involve no wear and tear but that is nothing in comparison to the income lost. There is however one difference between material goods and human beings. Man has more or less a limited life. If he remains idle, so many days or years are lost almost for ever. But if a machine remains idle, it can be used later on. It has a limited working-life while man has limited total span of life.

The demand for the various factors of production at

any time can be met partly or wholly by the employment of the existing material or human resources. The supply of a factor engaged in one type of production can be increased by the employment of idle units, by transferring it from other types of production, by importing it from another region, or, finally, by employing it for longer hours. Thus if more capital goods are needed in a particular type of production, say the production of cotton piecegoods, then the extra demand may be met by diverting capital resources from other industries or by employing wealth that was hitherto idle or by working existing machines longer hours every day. This had actually to be done during the last World War and thereafter. Similarly the supply of workers in an industry can be increased by reducing leisure and increasing the hours of work for which they are employed or by diverting workers from some other industries or by tapping the unemployed man power. Further the supply can be increased by raising the age of retirement or lowering that at which people start work or by employing more fully the members of a family. But where specialised work is needed transfer from one industry to another or the employment of new workers may take time. For workers have to be trained in the specialised work they are required to do.

It is sometimes argued that the difference between one factor of production and another should depend upon the extent to which they are substitutable one for the other. If one factor of production can be substituted by another for example, if a machine (i.e. capital) can be substituted for manual workers (i.e. labour) then basically they should be regarded as one and the same factor. For the demand and supply conditions of one affect both factors of production in a more or less equal degree. There is indeed in some respects a distinct advantage from the theoretical point of view in such a classification of factors. It should, however, be noted in this connection that to some extent all the factors of production are substitutable for one another. It is possible to reduce the risks of production by increasing the employment of mental exertion so that a better estimate of the future can be made and risks due to ignorance are minimised. Similarly the employment of automatic machines reduce the work of supervision resulting in an economy of human exertion (orga-

nisation and labour). Thus we see that *within limits* all factors of production are similar in the sense that one is substitutable by another.

Can factors of production be unproductive?

It is often maintained in books on Economics that labour (in the sense of manual work) is unproductive when it fails to achieve the finally desired result. If a man digs a well but comes across an impenetrable rock and has therefore to give up further digging then his labour is regarded as unproductive because he is said to have produced no utility. Or an artist who has almost completed a beautiful picture may completely spoil it by accidentally dropping his pot of colour on it. In either case the labour involved is said to be unproductive. This view however needs careful examination.

The view that labour is sometimes unproductive has also an interesting history in economic theory. The Mercantilists considered precious metals as wealth in a fuller sense than any thing else. Consequently they regarded only that labour as productive which was directed to the production of goods meant for export and which brought gold and silver in exchange. The Physiocrats regarded only agricultural labour as productive because in their view the agriculturalist alone produced a net surplus. He sows one seed but reaps many grains. Adam Smith improved upon the Physiocratic ideas but even he conceded that agricultural labour was more productive than labour assisting any other type of production. His followers did not adhere to this distinction but generally held that only that labour is productive which increases (material) wealth. Even Marshall could not get rid of the classical tradition and maintained, "It would be best to regard all labour as productive *except that which failed to promote the aim towards which it was directed and so produced no utility.*"*

Our analysis of the factors of production shows that labour (understood as physical exertion only) can produce nothing. It must be assisted by other factors of production before it can produce any wealth or utility. And so when these eco-

* Ibid page 65 *Italics mine*

nomists say that 'labour is sometimes unproductive' they really mean that 'factors of production are sometimes unproductive.' 'This is an absurd statement and sounds as funny as the statement that 'Night is Day' or 'Truth is untruth'. A thing can become a factor of production only when it assists production, that is, when it helps in the creation of extra utility. Hence factors of production or labour must always be productive. 'Unproductive labour' or 'unproductive factors of production' is a contradiction in terms which should be revolting to students of economics. When factors of production fail to achieve the desired result what actually happens is that the windfall or the unexpected is negative, that is, there are unforeseen losses. There is nothing unusual in this. We know that production always extends into the future. The future is always uncertain. Hence production always involves risk. The function of the enterpriser is to bear this risk for which he is paid a remuneration called profits. If there are unforeseen or unexpected gains they accrue to the enterpriser who also bears unforeseen losses if there are any. When a man digs a well he certainly does not foresee that he will come across an impenetrable rock otherwise he would not dig a well at that spot. So also when an artist paints a picture he does not expect that he will accidentally spoil it. It is true that in either case the producer takes some risk or at least there is a dim consciousness of a feeling of uncertainty that after his efforts are completed the final results of production may not be according to his expectations. When the final result is disastrous the earning of each of these men as suppliers of labour, organisation, enterprise and capital is positive, but the windfall is negative. The above analysis is clearer when we take an example and consider the case of a zamindar employing a hired worker to dig a well for him. Let us suppose that tools and all other capital needed to finance production are provided by the zamindar himself and that he also takes the risk of production himself. Let us suppose that the well costs Rs 500 as under:-

| | |
|---|-----|
| 1. Interest on capital | 50 |
| 2. Payment to workers (mostly labour and partly for organisation) | 350 |

| | |
|--|-------|
| 3. Remuneration for the planning and supervision to be done by the zamindar (mostly for organisation and partly for labour) | 50 |
| 4. Remuneration for risk taking. | 50 |
| | <hr/> |
| Total cost | 500 |

Now, the zamindar will only undertake the construction of the well if he is sure that it will be worth Rs. 500 at least when ready. But when the well is nearly ready his men come across an impenetrable rock and so it is worth, let us say, zero. In this case the zamindar cannot tell the workers you must refund your remuneration because the well is worthless. He must bear the loss himself as he undertook the risk and was paid Rs. 50/- for that. If he had insured himself against this risk with an Insurance Company and paid Rs. 50/- the remuneration for risk taking to them he would not have suffered any loss and the negative windfall would have accrued to the Insurance Company. In the other case, when the well water is unexpectedly wholesome or plenty of water is available at a depth of 50 feet so that it is not necessary to dig further as originally estimated then there is an unexpected gain—a positive windfall which will accrue to the zamindar, the risk-taker, and not to the workmen. Thus we conclude that the remuneration of all factors of production is always positive as they are always productive. What is sometimes negative and sometimes positive is unexpected or unforeseen losses or gains which we may call windfalls. Such windfalls accrue to the enterpriser only.

LAND AND CAPITAL

The term 'land' is even today used in varied senses by different economists. But a science cannot afford a changing connotation of a fundamental concept like 'land'. It must assign exact and precise meanings to the terms it uses otherwise it would give rise to great confusion of thought and retard the progress of the science itself. We will attempt to give a precise meaning to the term 'land' as it is used in economics.

We may begin by understanding the classical conception of land. Marshall may be said to have finalised the classical conception. While trying to distinguish between land and capital he writes in his famous *Principles of Economics* that "those material things which owe their usefulness to human labour" should be classed as capital and "those which owe nothing to it"* should be classed as land. There is every reason to believe that Marshall—a great economist that he was—realised that even the forces of nature when they assist production owe their usefulness to human activity, howsoever small the part which such an activity may play. This is obvious when he went on to say "The distinction is obviously a loose one: for bricks are but pieces of earth slightly worked up; and the soil of old settled countries has for the greater part been worked over many times by man, and owes to him its present form"**. He, however, failed to resolve these doubts, perhaps because of the strong classical influence that persisted even in his days, and was satisfied to conclude: "There is however a scientific principle underlying the distinction. While man has no power of creating matter, he creates utilities by putting things into a useful form; and the utilities made by him can be increased in supply if there is an increased demand for them; they have a supply price. But there are other utilities over the supply of which he has no control; they are given as a fixed quantity by nature and have therefore no supply price. The term 'land' has been extended by economists so as to include the permanent sources of these utilities; whether they are found in land, as the

terin is commonly used, or in seas and rivers, in sunshine and rain, in winds and waterfalls'. When Marshall speaks of 'the permanent sources of utilities' he is really thinking, in Ricardo's famous phrase, of "the original and indestructible powers of the soil". He, however, realised that a part of the fertility of the soil may be due to improvements made by man and he therefore intended to soften Ricardo's phrase when he said: "the greater part of the soil in old countries owes much of its character to human action; all that lies just below the surface has in it a large element of capital, the produce of man's past labour. Those free gifts of nature which Ricardo classed as the "inherent" and "indestructible" properties of the soil, have been largely modified, partly impoverished and partly enriched by the work of many generations of men. But it is different with that which is above the surface. Every acre has given to it by nature an annual income of heat and light, of air and moisture; and over these man has but little control. He may indeed alter the climate a little by extensive drainage works or by planting forests, or cutting them down. But, on the whole, the action of the sun and the wind and the rain are an annuity fixed by nature for each plot of land. Ownership of the land gives possession of this annuity". The classical concept of land differs from that of capital inasmuch as the supply of the soil and of the forces of nature is more or less fixed whereas the supply of capital can be increased by human efforts. And Marshall thought that it was this that "marks off land from those material things which we regard as products of the land." So far as the supply of land and the forces of nature associated with it are concerned Marshall observed: "Man has no control over them; they are wholly unaffected by demand; they have no cost of production, there is no supply price at which they can be produced". We have quoted Marshall extensively so that the reader may understand the classical concept of 'land' as modified by Marshall which is summarised in his famous definition: "By Land is meant the material and the forces which Nature gives freely for man's aid, in land and water, in air and light and heat."

¹Ibid Page 144.

²Ibid, Page 147.

³Ibid, Page 147.

⁴Ibid, Page 138.

It will be seen that Marshall makes 'land' synonymous with certain forces of nature which he enumerates. The classical economists have made the same distinction here as they did in dividing human exertion into labour and organisation. They separated the manual worker from the intellectual worker and made each a single factor of production. As we have seen the scientific division is into 'mental exertion' and 'physical exertion'. It enables us to see that the so-called manual and intellectual workers both provide mental and physical exertion. Just as they made 'labour' synonymous with 'manual work' not realising that manual work is partly organisation also, they made 'land' synonymous with 'the forces of nature'. Such a conclusion was natural in view of the fact that their entire approach was based upon the concept of equating one person with one factor of production. Thus they called a manual worker a labourer, a manager an organiser, the moneyed man a capitalist, and the owner of land a landlord. As we have seen one person usually supplies two or three factors of production. Consequently the functional approach is a superior one. They have tried to explain the characteristics of 'land' which made them distinguish it from capital and/or human exertion. According to them the chief characteristics of land are as given below. We shall analyse them later to find out whether they are peculiar to the forces of nature that assist production:—

1. Land is whatever forces nature supplies as a free gift.
2. The supply of land is limited. Man cannot increase it.
3. The properties of the soil are original and indestructible. They are replenished by an annual annuity.

If land is understood as a free gift of nature then one may pertinently ask where does such land exist. If it is a free gift one should get it without cost but as we know neither in the village nor in the town can we get any plot of land without payment of a price. Even in a new country such a plot is not to be found. No one has ever heard of any plot of land being available free anywhere in the world. Even the early settlers in a new country have to incur some cost before they appro-

priate a piece of land. If the Americans discover a new continent they claim it as their own and would not allow anyone to use it. They allow a person to use it on payment of a price or if no price is demanded they at least insist on the recognition of their suzerainty and allow him to use it with their permission. All we can say is that in this case a person can get a plot for a very low price. If it is free then any man should have the right to own it or to use it without any one's permission. In any case, the present owners of land in rural or urban areas have all bought it or inherited it just as they may buy a house or a machine. The soil is not a free gift to any one of them otherwise the socialists would be the first to urge the Government to confiscate it. Everyone will agree that at present no one can get a piece of land without payment of a price. But what about heat, light, rain, etc? Is that free? Certainly not. If they are free we should get them without payment of a price. Two plots of equal size are valued differently and fetch different prices because of differences in climate, rainfall, etc. A piece of land in a fertile district in U. P. costs more than a piece of equal size in the Sahara or Rajasthan desert or a piece of waste land. Though the size of the plots is same there is a difference in the price because of differences in rainfall, climate, etc. Let us consider the position in an urban area. One has to pay a higher price for a plot which is open on all sides and therefore has a better supply of air and light than an adjoining one of equal size but which is closed on some sides. We thus see that the area of two plots of soil may be the same but if there are differences in the quality of soil or quantity of rainfall or climate their prices are different. The difference really represents the difference in fertility plus capitalised value of the annual annuity in the shape of light, air and rainfall. Further, when one buys a plot of land one claims ownership over its climate as well. The sunshine or air in my house is not public property and one can use it only with my permission. It may, however, be argued that the original settlers Adam and Eve or their descendants or a Robinson Crusoe who is shipwrecked on an uninhabited island gets the soil free. This is then land. But even in such a condition the moment soil is appropriated it ceases to be a free gift. A thing is free if one gets it without cost. A thing may be a free gift in the sense that the giver does not charge a price. When a friend *A* presents a fountain pen to *B* it is true

that *A* is giving it free because he does not demand a price for it. On the other hand *B* does not get it free since he has to appropriate the pen before it can be his. His cost of having the pen is the cost of appropriation. All that one can say is that he gets the pen at a very low cost, which is equal to the cost of appropriation, say, a pie. Besides *B* will now pass this pen on to another person only on payment of an appropriate price even though he has got it very cheap. Coming back to our discussion of soil above we may say that even if the original settlers did not pay a price to a previous owner, as such an owner did not exist, they do not get it absolutely free in the sense of having incurred no cost. For, they will have to incur some cost in appropriating it, i.e., in fencing it or in asserting their ownership. This is their cost of acquiring the soil because unless they appropriate it the soil is not theirs otherwise every one would have an access to it. Then once having appropriated they will pass it on to some others only on payment of a price which may however be very small. Finally, are we considering (a) that which nature supplies or (b) that which assists production. While considering factors of production we are concerned with the latter only. What nature supplies does not concern us at all here until it assists production. Sunshine or light is just sunshine or light and we are not concerned with sunshine or light as such. We are only concerned with them when they assist production. While considering the production of potatoes in U. P. or of boots in a factory in Kanpur we are not concerned with sunshine in Calcutta or rainfall in Dacca. Then, what nature supplies does not necessarily assist production, e.g. rainfall may cause flood and destroy crops instead of assisting production.

It may, however, be argued that Nature supplies light and air, soil, rainfall, etc. freely to society or to mankind in general in the sense that nature does not expect any payment in return. The sun supplies light and heat, so very essential for existence, but it does not say, "I will not rise tomorrow if you do not pay for this light and heat." Not so an electric company or even a kerosene lamp. They supply no light unless some expense is incurred on procuring or producing it. A force of nature becomes a factor of production only when it assists production. In order that it may assist production it has to be appropriated. When it is appropriated

it involves some cost, howsoever small. If natural rainfall is a cheaper source of water supply than artificial rainfall or the water supply from irrigation works constructed by man, it is also destructive of human life, cattle and crops. If the forces of nature are an asset to mankind they are also a nuisance at times such as when they cause storm, floods, or earthquakes. Finally if 'free gift' is the main characteristic of land according to the classical economists then to be consistent it should have been said that whatever is a free gift is land. In that case the Swaraj Bhawan would be 'land' because it is a free gift to the Congress. Or if one received a factory as a free gift the entire structure should become land according to them.

The supply of land or the forces of nature is said to be limited in the sense that it does not increase with an increase in demand and man has no control in regulating it. This is a quality that is possessed by several other concrete objects also, such as, rare antiques or old paintings by renowned painters, manuscript of rare books, ancient coins, etc. In a sense the Taj Mahal, the Qutub Minar or St. Paul's Cathedral also possess these characteristics. Not is the supply of natural forces absolutely fixed as is sometimes supposed. The area of agricultural land can be increased through levelling or the clearing of weeds, the reclamation of waste or shallow lands. The effective supply of agricultural land is also increased by improving the fertility of the soil or its irrigational facilities or through mechanised farming so that a plot of agricultural land is made to yield two or three times its usual yield. The wonders achieved by the T. V. A. in America or the projected Damodar Valley Scheme show how man can control the supply of the forces of nature and use them to greater advantage. An uncontrolled river may cause floods every year as the Damodar river does but if its flow is checked and regulated, through human effort and skill, it becomes a source of increased water and power supply which can be put to different uses. In Australia even rain is produced artificially to protect crops against continued draught. So also crops are protected against severe cold or frost. Man is gradually extending his control over the forces of nature and at the same time he is able to produce artificially what they are meant to supply. Thus when air

is scarce high up in the sky or down below in a mine it is produced there through human effort. So also does man through air-conditioning devices make extremely hot or exceedingly cold places comfortable to live in. It is incorrect to say that man cannot increase or decrease the supply of the forces of nature that assist production.

The classical economists maintained that the properties of the soil are original and indestructible but they themselves realised that soil in its original form hardly exists anywhere. Its chemical and physical properties had changed due to use by man. It should also be noted that even the early settlers had to change the original form of the soil in which nature supplied it in order to use it for production purposes. The land had to be fenced, levelled or cleared before it was used for agricultural production. The soil in its original state had to be appropriated and its form changed before it became a factor of production. Instead of allowing weeds or wild growth to flourish thereon man used it to grow crops of his choice under his direction. That shows that land ceases to be in its original form the moment it is used as a factor of production. Now are its properties indestructible. It has often to be allowed to remain fallow to enable it to recuperate its fertility or has to be manured and ploughed for the same purpose. But Marshall maintained that though the soil or what is below the surface may lose its fertility or the fertility may diminish yet what is above the surface—rain, heat, air etc.—is indestructible. It is an annual annuity fixed by nature for each plot. But this also is not correct. Periods of draught are followed by good rains and famines are known to occur even in most fertile areas. It is the action of man that regulates the supply of water, etc. to ensure that a plot yields maximum crop. Where it is not possible to regulate these nature's excesses, such as storms, wind, and clouds, they become an impediment rather than an aid to production.

And thus we see that the classical conception of land cannot be restricted to the forces of nature nor can its characteristics as outlined by them strictly apply to soil, sunshine, or rain. But then what are we to understand by the term land. It is clear that all non-human forces or objects that assist production can either be land or capital. Capital is

that which is the result of past saving. A thing becomes capital only when it is preceded by an act of saving. When a man saves he refrains from consumption. It means that anything that can be saved must be capable of being saved or consumed. Consequently a thing can become capital only if it possesses this duality in its use, that is, (1) its use in being consumed and (2) its use in being saved. The owner has the choice to save it or consume it, which means that both the uses to save or to consume are alike available to him. Moreover for a choice what is needed is that the alternative uses should be equal to him. He should be indifferent as between the two uses. If the consumption use is more valuable than the saving use or vice versa there is really no choice. He will put it to that use which is more valuable. The question of choice arises only when both the uses are equally good. He may then prefer to save because saving will earn interest. When he saves he does not consume in the present but hopes to consume in the future. In the present he uses it for further production. He will choose to save so long as interest is more than the sacrifice incurred in waiting. Thus we see that a thing can become capital only if it has an alternative use *which is equally good*. But we know that almost everything has an alternative use. The alternative use may not be equally desirable, it may even be a foolish use—the point is that almost everything has an alternative use. For instance one may use a pair of spectacles as eyeglasses or use them as a paper weight or give them to his child to play with. These are the alternative uses of a pair of spectacles although all of them at any time or place may not be equally good uses. Since almost everything has alternative uses we can conclude that almost everything can assume the role of capital. But then the alternative use may not be an equally good use and we will, therefore, say that a thing is capital to the extent that the alternative use is an equally good use. It is not capital to the extent to which the alternative use is a poorer or a less valuable use and is, therefore, to that extent land. Or we may say that in so far as an object that assists production has an alternative use it is capital and in so far as it has only one particular use it is land*. In view of the fact that a thing

*The same concept is usually expressed in a different terminology.

to some extent possesses alternative use and to some extent is specific, it is best to talk in terms of the capital and land aspects of things. Thus if a thing is worth Rs. 100/- when used in one way and only Rs. 90/- when used in another and alternative way we can say that it is capital to the extent of Rs. 90/- and land to the extent of Rs. 10/- or that it has 90% capital aspect and 10% land aspect. When a thing is used in one way the sacrifice in that use is that it cannot be used in another way. To the extent that a thing has land aspect it incurs no sacrifice though it may assist production. There is no sacrifice because there is no alternative use to forego. Though there is no sacrifice in this sense yet it gets a remuneration because it assists production. This remuneration is a pure surplus since there is no cost to be debited against it. This surplus is, therefore, like a free gift and accrues to the owner of land who makes no sacrifice. Since this surplus earning without corresponding sacrifice accrues also to labour, organisation and enterprise* we can trace the land aspect in all the factors of production. Any factor of production therefore has a land aspect when it gets a remuneration without any sacrifice. Land ceases to be a separate factor of production because it is just an aspect that can be traced in all factors of production. Since this land aspect gets an income which is not balanced by any sacrifice we do not regard it as a factor of production because a factor of production is necessarily associated with the concept of sacrifice. Land thus becomes an abstract conception. We can see the land aspect in a

To the extent to which a thing is considered to have only one use it is said to be specific and to the extent that it has an alternative use it is non-specific. Since no good is entirely specific it is best to say that "things are specific in so far as they are *thought of* as serving one particular purpose and are valued on that basis, while they are non-specific in so far as they are valued for their potential usefulness in a wide range of different purposes."

*These factors of production have a land aspect to the extent that they are specific. To the extent that one can do just one kind of work there is no sacrifice for him and hence no cost. The earnings become a pure surplus, a free gift.

If a man earns Rs. 100/- in one occupation but could earn only Rs. 80/- in an alternative occupation then Rs. 80/- is his cost of earning Rs. 100/-. The balance of Rs. 20/- is a surplus which accrues to him because of the land aspect in him. Also see pages 110-11 supra.

worker just as we can trace the non-land or capital aspect in soil. And so we conclude that the meeting point between the classical and the modern views of land is that both regard the earnings of land as a pure surplus—a free gift. Consequently, land (or rather the land aspect in modern terminology) has no supply price.

Depreciation of Capital

The greater part of the capital goods used in a factory or commercial organisation consist of buildings and furniture, machines, tools and implements, raw materials, etc. These goods are gradually consumed in the process of production of finished commodities or services. The consumed wealth is reflected in the value of the finished product. The sale price of the finished product, therefore, covers not only remuneration to the human factors of production but also the cost of replacement of capital used up in production. So far as capital is concerned the production of every single unit of output, involves the using up of raw materials whose form or shape is changed in that process. A productive organisation has, therefore, to be continually fed with the supply of raw materials as every unit produced involves a quantitative diminution of the stock of raw materials. On the other hand, more durable capital goods like buildings and furniture, machines, tools and implements are used up gradually so that they wear out in course of time. Machines or tools may also become obsolete due to improved and more efficient varieties having appeared in the market. As these improved varieties imply more efficient production and reduce the cost of production it pays a producer at times to scrap the old ones even before they are completely worn out. The earnings of capital have, therefore, to provide not only a remuneration for the capitalist to compensate him for his sacrifice of waiting but a contribution to a "depreciation fund" to meet the loss due to wear and tear. The depreciation fund should be allowed to accumulate at such a rate that there are adequate funds to meet replacement of capital goods when they wear out or become obsolete. Every productive unit, therefore, maintains a depreciation fund to which annual contributions, that are a charge on the sale price of the finished product, are made. The absence of such a

fund may bring disaster to a producer who may be unable, except by fresh borrowings, to replace these capital goods when they have worn out and discover too late in the day that he had actually been living on capital rather than income. The provision of depreciation fund is of special importance today when the use of capital goods has enormously increased.

Specialization and use of Machinery

The increased use of capital involves round about methods of production. Each man specializes in the production of a few commodities or services and exchanges them for the products of others which he needs. Under the primitive methods of production each consumer was to a great extent his own producer in the sense that he himself, assisted by his family members, produced most of the commodities that he required for his or his family's use. The position is completely different today. One has not only to depend upon an army of producers to supply him the things he needs but he has also to depend on them to purchase the goods or services which he produces. The happiness of one therefore depends upon the prosperity of many. The human race is being knit more closely together—a process that has been assisted with the phenomenal improvement in the means of transportation and communication. The village artisan is giving place to a modern factory. The leisurely, peaceful and serene atmosphere of the home worker is giving way to the business-like alertness and bustle of a mechanised factory. The use of machinery increases the annual flow of wealth of a nation because machines work faster and perform more accurate work. The increasing wealth is, however, accompanied by increasing wants and though it is true that the average man today is able to satisfy more wants than his forefathers ever did it is also true that he has a much larger number of unsatisfied wants. Look at the irony of fate! The average man is happier because he is able to satisfy more wants. He is at the same time more miserable because of the increasing number of unsatisfied wants that cause him pain. A cruel choice indeed! The remedy is renunciation of wants so that one is happier without being more miserable

The conflict between machinery and handicraft method of production is basically a conflict between two philosophies. On the one hand there are people, and this group includes most modern economists and politicians, who believe that only through increased use of machinery it is possible to raise the standard of living of the masses and to provide them with modern amenities of life. On the other hand, there are philosophers and thinkers, like Mahatma Gandhi, who believe that machinery always leads to evils and abuses. Though the handicraft system means less wealth for the nation it means more welfare. Machinery leads to large scale production with its attendant evils of smoke, over-crowding and noise so characteristic of an industrial town. These involve a heavy drain on human health and happiness. Of what use is increased wealth if it does not lead to a happier and nobler life?

It is indeed true that the increased use of machinery is associated with certain evils but a closer analysis will reveal that quite a large number of these evils are not due to machinery itself but mostly to the misuse or abuse of machinery by the capitalist class which is more concerned with its profits rather than national welfare. Since a government no longer believes in *laissez-faire* it should be possible for this authority to regulate production in such a manner as to minimise the evils associated with industrial expansion and concentration. Nor does the increased use of machinery necessarily mean the elimination of the small man though it is true that machinery makes mechanised production on a mass scale possible. Machinery can be made to assist the small producer as well so as to lessen his toil and increase his earnings—both extremely desirable objectives. The supply of cheap power and small machines to the cottage worker in Japan has achieved wonders and probably therein lies the competitive strength of that country. Even when machinery leads to mass production and concentration of population it is possible for the state to enact legislation to enforce decent housing conditions, and fair wages, and create healthy surroundings for the people.

The use of machinery takes over heavy arduous work and thus relieves the strain on human muscles and often makes possible pieces of work too stupendous for human beings to accom-

plish. Machinery can also do most delicate types of work because it works more accurately repeating movement with great precision. Because of the accuracy with which a machine works it is possible to produce contrivances with interchangeable parts. This considerably reduces the cost of repair and replacement and consequently cheapens the cost of production. It is the use of machinery that enables mankind to increase its control over the forces of nature that are used for beneficial purposes, for example, multi-purpose hydro-electric projects. Then, machinery makes possible the production of goods on a large scale and thus enables a single factory to cater for a large market. Since production under such an organisation is on a vast scale it is economical for such an industry to use machinery even for small operations. One has only to visit a match factory—say of Wimco's at Bareilly, where the entire operations from cutting huge logs of wood to the production of a match box is mechanized—to realise the full implications of this advantage. Since the working of machines in different industries has basically a common working principle the use of machinery reduces the barriers between different trades and thus increases the mobility of labour. This also reduces the demand for specialised manual skill and requires merely a moderate amount of intelligence and commonsense on the part of a worker. Thus it increases the scope of employment of unskilled workers. Work of a routine and monotonous type can be taken over by machinery and since a worker on a machine has to repeat the same operation several times and his energies are concentrated on that small operation it suggests inventions that further reduce the monotony of work. Finally, all these advantages result in improving the efficiency of production. This is doubly advantageous. It enables higher wages to be paid to workers and the reduction of the selling price. Both these lead to increased consumption and thereby an improvement in the standard of living of the people.

To state one argument is not necessarily to be deaf to all others. Though machinery has several advantages it has certain defects also—defects which arise not because of the abuse of machinery but which are inherent in it. The working of machinery is often accompanied with great noise which is a heavy strain on the nervous system. If the motive

power to operate machinery is generated by coal there is heavy smoke that makes the neighbouring atmosphere unhealthy. Machinery insists on uniformity and exactitude as opposed to variety which is the essence of life and consequently tends to monotony of work and life. Then, a worker's individual contribution, under mechanised production, is almost insignificant. He consequently takes little pride in his work which is likely to impair his incentive for improvement. Finally, machinery can only produce standardised articles. It is consequently suited to the production of commodities or services where individual peculiarities of consumers are unimportant.

Supply of Capital. The increased use of machinery depends upon the supply of capital funds. The supply of capital depends on the growth of savings, which itself depends upon a medley of subjective and objective considerations. These considerations vary from country to country and from time to time but there are certain general causes which are analysed below.

In primitive and even medieval times most of the savings were done by individuals. Today, however, a considerable proportion of savings is effected in almost all communities by corporate institutions (joint-stock companies) and government or semi-government bodies. The joint-stock corporations save by setting aside a part of their current income for strengthening their reserves instead of distributing it by way of dividends to their shareholders. Similarly, government and semi-government bodies also induce saving when they finance capital expenditure out of their current revenues.*

* A very large proportion of current savings are made in the form of investment in the growth of the human factor, e.g., government expenditure on education or sanitation or when parents spend on the education and training of their children. It is generally better for parents to invest their savings in the education and training of their children than in the purchase of shares or ornaments. A parent may save Rs. 10,000 and leave them for his children so that they have an annual income of Rs. 300 or he may invest a part or whole of these on the upbringing, training and education of his children so that they are able to earn Rs. 400 or Rs. 500 per annum more. Many intelligent and wise people prefer the latter type of saving. A man also saves when he spends on durable goods, e.g., when he buys a sewing machine or a typewriter. Strictly speaking all expenditures that increase the efficiency of a person and thereby enable him to earn more are of the nature of savings. They are investments rather than expenditure.

Since corporate institutions and government or semi-government bodies have greater foresight and prospectiveness they save more than an individual would under similar circumstances.

Subjective Considerations are those which depend upon the outlook of an individual saver. They are related to his prospectiveness and work from within himself. Growth of savings depends upon the saver's foresight—his capacity to anticipate the future and make provision for it. Life itself is a big risk and one can never be sure about the regularity of income, particularly if it is earned income. The sources of earned income may dry up due to disease, old age or death. People, therefore, save to make provision for a rainy day. Besides, one may expect one's future needs to expand without a corresponding increase in income. Future needs may increase due to family responsibilities—increase in the number of children, their education, marriage, etc. People may also save if they want to become rich or to increase their unearned income and thereby earn distinction in the community. They may also save in order to have more leisure in the future. Sometimes people save because they dislike extravagance or have formed the habit of saving. Yet another motive is family affection. Saving is done in order to make provision for the family particularly for the day when the bread-winner may be out of the picture. That a great part of saving is due to domestic affection is clear from the fact that people do not spend all their savings in their lifetime and prefer to leave them for the benefit of their children or descendants. Sometimes people live very economically because they want to give large sums of money in charity to philanthropic or charitable institutions. Finally, one may save when the interest of the country demands it such as when there is a war.

Objective Considerations depend upon those circumstances which are exterior to the saver. One can only save if there is a surplus of current income over current needs. The savings of the middle class in our country today are so small because of the absence of such a surplus in most cases. Their incomes have not increased in proportion to the heavy rise in prices. This surplus also depends upon total income

which in the case of the majority of our people is very low. It depends on net income, that is, gross income less what is collected by the state in taxation. If taxation is very high the margin for surplus is reduced. When the rates of income tax were nominal people could build up rich fortunes in a life-time which has been rendered most difficult due to high rates of taxation. The growth of savings also depends upon the security of life and property. One must have reasonable assurances that the sacrifices undergone by him to accumulate wealth will not be in vain, that is, his savings will be available for use by him or by those for whom he wishes to make a provision. The spendthrift nobles in pre-British India had little incentive to save when the security of their savings depended upon the mercy of tax gatherers or rapacious administrators. Frequent invasions and the danger of bandits or plunderers also acted as a strong discouragement to savings. Man also needs security against the violence and uncertainty of the forces of nature. Where wealth is destroyed by frequent earthquakes, volcanic eruptions or floods men are likely to develop Epicurean tendencies. There must also be stability of government and absence of fear of a social or political revolution involving confiscation of wealth through abolition of private property or penal taxation.

The introduction of money as a medium of exchange has greatly facilitated the growth of savings. Some types of services or perishable goods cannot easily be stored for future use and consequently money acts as a convenient store of savings. There must also be profitable avenues of investing the savings. It is a well-known fact that one of the causes of the lack of saving habit amongst the villagers in India is the absence of investment facilities in rural areas. The growth of banks, joint-stock enterprise, government borrowings, and investment facilities provided by the Post Office have tremendously assisted the development of the saving habit in India. Finally, the growth of savings depend upon the money rate of interest. Savings imply postponement of consumption and impose the sacrifice of waiting on the saver. Interest is the remuneration for the sacrifice of waiting. A person goes on saving so long as this remuneration is not less than his sacrifice. Consequently, with a high rate of interest savings are greater than when the rate of interest is low. Gene-

rally, therefore, the rate of savings varies with the rate of interest. Savings increase when interest rates are high. They diminish when interest rates are low. Under certain circumstances, however, a person may save more when the rate of interest is low as when he saves in order to ensure a fixed income for himself or his heirs in the future. With a lower rate of interest more has to be saved and invested to ensure a fixed income. In such cases the growth of savings varies inversely with the rate of interest.

CHAPTER XVIII

THEORY OF PRODUCTION

Production means the creation of new utilities. Man cannot create matter. He can only re-arrange given matter so as to create new utilities. With given resources in land, labour, capital, etc., it is within the competence of man to produce more or less of any particular type of utility. This is done by arranging given resources in different ways as to produce either cars, bicycles, aeroplanes, biscuits, chocolates or ice cream. This is what we mean when we say that a country has choice between guns and butter. It does not mean that the same material goods can literally be converted into one or the other but that given resources can be utilised to produce any utility we like. This utility can also be produced by bringing things, which already possess utility, from a place where they are not used to a place where they are used. This includes the traders' work in production. A cultivator produces wheat, a coal miner coal, and a trader who brings them to the market adds to their utility.

Factors of production

It is customary to divide the factors of production into five categories—land, labour, capital, organisation, and enterprise. In the beginning only three factors, land, labour, and capital, were recognised but Marshall added organisation and, more recently some have added enterprise as a separate factor of production. Land signifies all those factors, such as fertility, space, land surface, air, water and sunshine, which are given by nature. They are *free gifts* of nature and man cannot influence their creation. Labour signifies physical effort while organisation means mental effort. The labourer takes his orders from the organiser and carries them out while the organiser has to do original thinking and takes his own decision. It is not possible to say that the work of a labourer is altogether physical and that of the organiser is mental, because while the former needs mental effort for doing the work the latter has to

put in physical effort*. The chief difference is that the mental work of a labourer is of a routine type while the physical labour of the organiser is only by the way and his chief function is original thinking and deciding. The chief function of the entrepreneur or enterpriser is to take risk. In producing rubber shoes there is the risk whether they will sell or not and the price at which they will sell. This risk is taken by the entrepreneur and he bears its loss or gain.

In more recent times it has been recognised that in spite of some differences between these different factors they have common features and it is not possible to divide them into four or five categories. If we follow this method to its logical conclusion each raw material will be called a factor. Each individual labourer will be a separate factor. For this reason, following the ideas of Von Wieser, the factors of production are divided into two broad categories, specific and non-specific. This makes it possible to focus attention on the most important characteristic of the factors of production. Perfectly specific factors are those which, for the time being, can be put to only one single use while perfectly non-specific factors are capable of being used in a number of alternative ways. The chief difference between this and the old classifications is two-fold. All factors, land, labour, capital and others can belong to either category of specific and non-specific factors. An old man of advanced age who is unable to learn a new trade, is a perfectly specific factor. At the same time a piece of land which cannot be put to more than one use of either cultivating wheat or building a canal is perfectly specific. Unskilled labourers, money, and land which is capable of many alternative uses are all non-specific. The difference is that non-specific factors can claim a payment equal to their marginal productivity while specific factors have no such power and they would be paid what the producer can afford to pay. It is worth realising that a factor may be partly specific and partly non-specific and what is specific to-day may become non-specific in the future.

The necessary condition for production is that there must be at least two factors. One single factor by itself can

*The tendency now-a-days on the part of some is to identify labour with physical work and organisation with mental work only.

produce nothing. If you go and pluck a fruit there is your labour and the tree which is either land or capital. In complicated round-about-production more than two factors are frequently needed but two is the minimum number.* According to the latest classification of factors, every act of production must have both specific and non-specific factors though the proportion in which they are present would naturally differ. Another important point is that the same given resources can be combined in different proportions to produce the same result. We can produce a thousand pairs of shoes with either 3 workers and 10 units of machinery or say, with 20 workers and 4 units of machinery. This creates the possibility of substitution of one factor for the other to secure a given result, and a producer tries to achieve the best combination by this process of substitution.

Laws of return

Every act of production, if continued, will yield three different results. These are known as Increasing, Decreasing, and Constant returns. If one factor of production is kept constant and the other factor is increased by a small unit the output will increase either more than proportionately to the increase in the amount of the variable factor, in which case it is known as increasing returns, or the output will increase less than proportionately in which case it is known as decreasing returns. When, however, the output increases in exactly the same proportion it is a case of constant returns. But in each case the output must increase because otherwise it would not be worthwhile for the producer to use the additional amount of the variable factor. Let us take a few examples.

| | | | |
|---------|---------|-----------------|-----------------------------|
| | Machine | + 100 labourers | give a product of 200 units |
| Case 1. | | + 101 labourers | give a product of 203 units |
| Case 2. | | + 101 labourers | give a product of 201 units |
| Case 3. | | + 101 labourers | give a product of 202 units |

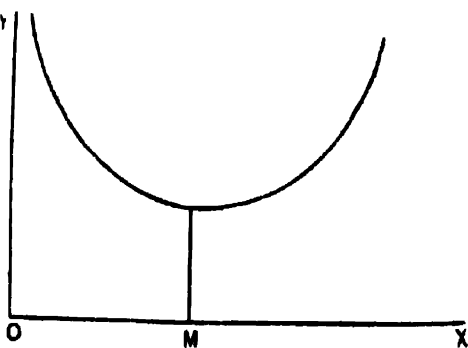
*Though in the objective sense even two factors are sufficient, in reality there must be all the functions of production labour, organisation, enterprise and waiting.

In the first case 1 per cent increase in one factor of production, keeping the other factor (machine) constant, increases the output by more than one per cent, i.e., by $1\frac{1}{3}$ per cent. This, therefore, is a case of increasing returns. This should be considered as decreasing cost per unit. The advantage of considering it in terms of costs of production is that, comparing the changing costs with the price, we can immediately see whether it is advantageous to continue production further. It also indicates to us the profits which the producer makes.

In case 2 the output has increased only by 0.5 per cent while the number of labourers, keeping the machine constant, has increased by 1 per cent. This is a case of decreasing returns or increasing cost per unit. In case 3 the output has increased exactly in the same proportion, i.e., 1 per cent, as the number of labourers and this is a case of constant returns or constant costs. In all these cases it is worth noticing that all the other factors, except labour, have been kept constant. The increasing amounts of labour applied to fixed land and agricultural implements and bullocks, etc., give increasing or decreasing returns to land. Similarly, increasing amounts of labour applied to fixed machinery, raw materials, etc., give increasing or decreasing returns to that equipment. In the case of manufacturing industry when one more labourer is engaged, the machinery, capital, raw materials, etc., are maintained in fixed supply but the raw materials are adjusted so as to provide work to the additional labourer. If a tailoring shop takes one more tailor and the number of sewing machines, thread, buttons etc., is maintained constant it would be necessary to re-distribute the work between different tailors so as to accommodate the new tailor. He will also have to be provided with additional cloth and thread to enable him to produce. But suppose with the existing equipment the number of tailors previously engaged was producing 20 shirts per day and with the new tailor doing the work along with the existing ones the number of shirts produced has increased to 23, the marginal productivity of labour is 3 shirts. If these three shirts sell for Rs. 2-8-0 each, the marginal productivity of labour in value terms, or to be more exact the "value of marginal productivity" is Rs. 7-8-0. The additional labourer will not be taken

if his wage exceeds this marginal productivity of Rs. 7-8-0, because the producer cannot afford to pay more than this without incurring a loss. But if wages are below this level he will go on taking additional labourers with a view to exploiting the existing equipment to the largest possible extent.

Both in manufacturing industry and in agriculture as the amount of one factor, keeping all the other factors constant, is increased the cost of production per unit falls. This is due to the fact that additional labour makes it possible to use the existing machinery to full capacity. This process goes on till the machinery and equipment are worked at "optimum" capacity i.e. at a level where either an increase or decrease in the number of labourers results in increasing the costs of production. In the figure the cost of production per unit is shown along the y-axis and the number of units of the commodity produced along the x-axis. The cost of production per unit of output goes on falling till an output of OM is reached. This is the optimum output and here the factory is working at optimum capacity. The cost of production at this point is the lowest possible. If production is either increased or decreased by one unit the cost will rise. At this point of optimum production minimum costs of production obtain. If output is increased by one unit the cost rises because now decreasing returns (shown by the increasing costs of production per unit) set in. If the output is reduced by one unit the cost rises because there is still some scope for getting increasing returns by using additional labour. The producer will take this additional labourer because it is in his best interests to produce at minimum costs or at the optimum scale. This is so because when there is competition a producer who has the lowest costs has a better competitive power. With given prices for commodities the profit of the producer increases if the costs of production are reduced. The profit would naturally be maximum when production is taking place at the optimum scale.



Every producer, therefore, makes an effort to produce at the optimum scale i.e. he tries to take full advantage of increasing returns or economies of large scale production. Whether he can do so or not depends upon various factors.

Optimum size

In a study of economics of large scale production or, which is the same thing, the laws of return the optimum size plays a significant part. Up to the optimum size there are conditions of increasing returns or economies of large scale production are enjoyed by any increase in output. Beyond the optimum size the diseconomies of large scale production or decreasing returns begin to set in. In the figure the production *OM* is taking place at the optimum size. At the optimum size production takes place at minimum costs.

There is no industry that has just one particular optimum size. The optimum size differs from locality to locality and sometimes from plant to plant depending upon a number of considerations such as the nature of machinery, the supply of raw materials and power, the extent of the market and so on. As scientific inventions are made and industrial organisation is improved the optimum size for an industry changes. In the case of India's sugar industry the 1932 Tariff Board considered a factory with a cane crushing capacity of 400 tons per day as optimum while the 1938 Tariff Board considered 500 tons capacity per day as optimum. In 1948, a size of 850 tons crushing capacity was considered optimum and the U. P. and Bihar Governments have given facilities to sugar factories which were below this size to expand to a capacity of 850 tons per day. In the case of the cotton mill industry the 1932 Tariff Board considered a cloth mill with 600 to 700 looms and 20,000 to 25,000 spindles optimum for Ahmedabad and a mill with not less than 1,000 looms and 35,000 to 40,000 spindles optimum for Bombay. The chief factor in making the optimum bigger for Bombay is the availability of electric energy from the Hydel system. In Ahmedabad the mills have to generate their own electric energy and the optimum size of the electric plant being lower, the optimum size of the cotton mill is also reduced. In the case of jute mills the optimum size is represented by mills having an equipment of 500 to 1,500 looms.

In actual practice all the mills do not work on the optimum size. Some are too small and some too big. But in order to secure economies of large scale production to the largest possible extent i.e. to produce at minimum cost each mill tries to come to the optimum size.

| Actual capacity | Number of sugar factories reported working in 1936-37 |
|-------------------------|---|
| 1—250 tons per day | 26 |
| 251—500 tons per day | 50 |
| 501—750 tons per day | 34 |
| 751—1000 tons per day | 22 |
| Over 1,001 tons per day | 8 |
| Total 140 | |

These figures about the sugar industry show that only about one-third of the mills are of the optimum size. The others are either too big or too small. The same is the case in all other industries. In the case of cotton mills the Bombay Millowners' Association estimated that out of 277 mills only 158 were of optimum size as defined by the Tariff Board while in Ahmedabad, according to another estimate, out of 277 mills only 127 were of the optimum size.

Economies of large-scale production

Why do producers have economies of large-scale production? Why do the costs of production per unit decline up to the optimum size of production? Why do increasing returns obtain? This is due to "internal" and "external" economies of production, according to Marshall. Internal economies are those which are within the control of each entrepreneur by his own effort such as better organisation of different departments, use of better methods of production, dividing work in such a way as to place the most suitable man to each job. External economies, on the other hand, are those that become available to each producer by reason of an expansion in the size of industry and are not within the control of each producer such as the availability of postal

and transport facilities, the output of subsidiary industries, and the availability of suitable labour and capital. Each producer has to make his selection of these from the available supply. An increase in the supply or an improvement in the quality of these factors is beyond the control of an entrepreneur working individually. These facilities are available as a result either of planning on some one's part or an expansion in the size of the industry (as distinct from each factory or firm).

The chief reason for internal economy or a reduction in the costs of production as output increases is the indivisibility of the fixed factor. This indivisibility is there in machinery, office equipment, marketing and other organisation attached to each firm. By indivisibility we mean the incapacity of human ingenuity to produce machinery below a certain size. Suppose we wish to produce cement. It is not possible to manufacture machinery which can produce one bag of cement per day. If machinery can produce, at the minimum, 1000 bags of cement per day but we produce only one bag the cost of this bag will be too high because the entire machinery has to come into operation whether we produce one bag or one thousand bags. There is, so to say, an indivisibility in the machinery. If we employ more labour and raw materials and produce a larger number of bags per day the machine capacity is utilised to better advantage. The cost of operating this machinery is now shared by a larger number of units, hence the cost per unit falls. This is the chief explanation for economies of large scale production or for the phenomenon of increasing returns. This indivisibility also attaches to office equipment and machinery, the services of the managing agents, skilled labourers and technicians, and marketing organisation. As production increases each bag of cement shares a smaller proportion of these costs which must be incurred no matter how much cement is produced. These are known as "fixed" or over-head costs. The cost per unit of output falls as the over-head costs are now distributed over a bigger output. The costs of unskilled labour and raw materials etc. which will be purchased only if cement is produced are known as variable costs. If more cement is produced a greater variable cost is incurred and if less cement is produced the vari-

able cost is less. As output increases the variable cost increases either in the same proportion as output or, more frequently, in a higher proportion.

In the following example in case I we produce 10 bags of cement with machinery fit for producing 1,000 bags. The result is that the cost per bag of cement is Rs. 102.0. If a larger number of bags is produced the cost will fall. If we produce 1,000 bags the over-head cost will remain more or less the same. It might increase by a small amount due to greater attention and more greasing needed when the machinery is working at full capacity. In case I the over-head cost is Rs. 1,000. In case II it may be Rs. 1,100. The variable cost in the first case is Rs. 20 while it is Rs. 2,000 in case II, if we assume that the variable cost increases in proportion to output.

| Case I Number of Bags of Cement per day | | Total cost |
|--|----------------|------------------|
| | | <u>Rs.</u> |
| 10 | Over-head cost | 1,000 |
| | Variable cost | 20 |
| | | Rs. 1,020 |
| Cost per unit i.e. per bag Rs. 102.0 | | |
| Case II 1,000 | | |
| | Over-head cost | 1,100 |
| | Variable cost | 2,000 |
| | | <u>Rs. 3,100</u> |
| Cost per unit i.e. per bag Rs. 3.1 | | |

As the size of output increases the costs of production come down and the lowest cost at Rs. 3.1 per bag of cement is achieved when the plant is producing the optimum output of 1,000 bags per day. In the same way the office expenses per unit of output fall as more is produced because a larger number of units share this fixed cost. As the size of an industry, as distinct from a firm or factory, expands and subsidiary industries come into existence to supply semi-manufactured

raw materials to the main industry, the costs of production of the main industry decline on the same principle of indivisibility. When the Indian glass industry was small it had to make its own packing material, which proved costly. Now because of an expansion in the size of the industry cheap packing material can be purchased from a subsidiary industry. In the beginning the motor car manufacturers made their own glass, rubber and electricity fittings and the cost was high. Now these can be purchased at a much lower price from the market, thus reducing the cost of producing a motor car.

Diminishing returns

As the size of production increases beyond the optimum or, let us say, more is produced with the help of fixed factors of production, the cost per unit rises again. This is due to the diseconomies of large scale production or the phenomenon of diminishing returns. This applies both to manufacturing industry and agriculture. If a given piece of land is subjected to intensive cultivation, after a time, the costs of production begin to rise. In manufacturing industry if production is increased beyond a limit the costs of production per unit of output rise.

What is the exact meaning of diminishing returns? Marshall's classic definition of diminishing returns runs as follows : "An increase in the capital and labour applied in the cultivation of land causes, in general, a less than proportionate increase in the amount of produce raised, unless it happens to coincide with an improvement in the art of agriculture". This definition is all right so far as it goes and would give a correct result if applied *with care*. A more recent definition of increasing and decreasing returns is more exact and refined. It is also fool proof. "The Law of Diminishing Returns, as it is usually formulated, states that with a fixed amount of any one factor of production successive increases in the amount of the other factors will, after a point, yield a diminishing increment of the product. Looking at the matter from the point of view of cost of production, if one factor is fixed in amount and increased amount of other factors are used with it, and if no improvement in the efficiency or reduction in the price of these other factors is introduced by

the increase in the amount used, after a point the cost of production per unit of output will rise" (Mrs. Joan Robinson). For purposes of comparison with this the definition of increasing returns from the same author is as follows: "When an increased amount of any factor of production is devoted to a certain use, it is often the case that improvements in organisation can be introduced which will make natural units of the factor (men, acres, or money capital) more efficient, so that an increase in output does not require a proportionate increase in the physical amount of the factors". A comparison between these two definitions clearly brings out the fact that diminishing returns is more fundamental than increasing returns.

What are the causes of diminishing returns? The indivisibility which gave rise to increasing returns is also responsible for decreasing returns. If production is taking place at the optimum scale, as in case II, and it is desired to obtain more output from the same machinery the result is an overstraining of the fixed factor. This increases the wear and tear and, in the case of machinery, more greasing and greater human attention become necessary. This increases the overhead costs more than proportionately.

| Case III Number of Bags of Cement per day | | Total Cost |
|--|-----------------|------------|
| | | Rs. |
| 1,100 | Over-head costs | 1,400 |
| | Variable costs | 2,200 |
| | Total | Rs. 3,600 |

Cost per unit i.e. per bag of cement Rs. 3.27

As seen in case III the cost per unit rises to Rs. 3.27 per bag, as against Rs. 3.1 per bag in case II, if the machinery is over-strained. This is due to the fact that the entire plant capacity is used up and there is no more unused capacity in the machine factor to be exploited. Since the cause which gave rise to increasing returns is removed diminishing returns are bound to be experienced as we increase production. This

is seen more clearly in the case of land. Intensive cultivation exhausts the fertility of the soil and as fertility goes down, the yield of crop falls or, in other words, the cost of output rises.

Another important reason for increasing costs of production is the limitation in the supply of the variable factors as well. In the ultimate analysis the amount of labour, raw materials, etc. available to any industry is limited in supply. It must be emphasised that we are not speaking of each firm but of the industry as such. It is possible for one cotton mill to increase its output by buying more raw cotton. This will not affect the price of raw cotton in the market. But if the production of yarn and cloth in the cotton mill industry of India, that is by all cotton mills constituting this industry, increases and more raw cotton is required the price of raw cotton is bound to rise. Upto a point raw cotton will be attracted from other uses, a larger amount will be imported, and if a sufficiently long period is considered a larger amount will be grown in India. But beyond a limit this cannot be done. In that case any increase in the output of cloth, and consequently in the demand for raw cotton, will lead to a rapid rise in its price. This rising price of the variable factors, if their demand by industry or agriculture increases, is an important cause of the rise in the costs of the commodity produced. The bounty of nature is limited and it is not possible to increase the supply of raw materials, coal, and labour beyond a limit. This gives rise to diminishing returns.

Here it is important to make a distinction between diminishing output per unit of factor employed and diminishing output per unit of expenditure incurred. The former is difficult, if not impossible, to calculate when a number of factors are co-operating in the production of a commodity. The latter, however, is not difficult at all. Although it is not possible to calculate returns per unit of factors employed (because there are a number of heterogenous factors used) it still serves a useful purpose to distinguish in our mind the returns to factors from the returns to expenditure. When, for instance, we say that diminishing returns are due to the indivisibility of one or more factors, we are thinking not in terms of expenditure but in terms of physical units of factor or factors. Without having to increase the quantity of a

factor we get greater returns because we are able to use it more fully. Likewise, we get diminishing returns when in spite of using a greater quantity of some factors we do not get greater output (at least not in proportion to the increase) because this extra quantity remains unused due to the limitation of the fixed co-operating factor. Diminishing returns are here understood as due to peculiarities of the technique of production.

When, however, we say that diminishing returns may also be due to the fact that variable factors may become scarce and therefore expensive, we are looking to the expenditure side of the act of production. The same quantity produces the same as before, but now the factors cost more. This is not the technical side of the productive activity, but, if we like to call it so, the business side of it.

There is a way of converting the business side into the technical side. Why is it that the price of a variable factor rises? It is because there are some diseconomies of production in the industry producing that factor. And these diseconomies are naturally due to the indivisibility of some factor of production used by that industry. Thus the technical limitations of production in one industry cause a rise in the money expenses of production in another industry. We can therefore say that the one cause of increasing or diminishing returns is the indivisibility of one or more factors of production in one industry or the other.

It is possible, however, to trace back the cause of diminishing returns ultimately to the scarcity of some factor in a basic industry. That scarce factor may turn out to be some species of natural resources or perhaps some variety of human intelligence. Factors such as these are scarce and bound to remain so in spite of all our efforts to increase them. Where our endeavours to increase production are thus thwarted by the scarcity of such factors, there is no way out of the difficulty. The only possibility seems then to lie in our ability to substitute for the scarce factor some that is not so scarce. But that demands perhaps a kind of intelligence that is scarcer still.

If we think more deeply about it, the chief difficulty

is not the limitation in the supply of each factor of production but our incapacity to substitute one factor for another beyond a limit. If raw cotton is in limited supply but we can substitute another raw material for it to the fullest possible extent, i.e. the elasticity of substitution between raw cotton and this other material is infinite, the price of raw material need not rise and diminishing returns would not set in. Suppose labour is in short supply but the elasticity of substitution between labour and machinery is infinite i.e. machinery can be easily and freely substituted for labour an increase in the demand for labour will not increase its price. In actual practice, due to the backwardness of scientific knowledge and our ignorance, and technical and other considerations the elasticity of substitution between factors is small. This gives rise to diminishing returns.

This point is of very great significance in the case of the entrepreneurial factor. Up to a point an enterpriser can expand the industry under his control by employing assistants and by subdividing the work further, but there is a limit to it. Ultimately, all the decisions have to be taken by one brain and all the thinking has to be done by it. The assistance of others can only be obtained merely in carrying out these decisions. The work of thinking and deciding can also be delegated to a certain extent but in that case the work of co-ordination increases. In either case it is the limitation in the capacity of human brain which leads to higher costs, if production is increased beyond a manageable limit. In this case also it is not the limitation in the brain capacity of human beings which really matters but it is the impossibility of substituting some other agency for the human brain which gives rise to diminishing returns. As the work expands and becomes heavy it is neglected and hence the costs of production rise because of lower efficiency.

Principle of substitution

In order to achieve minimum costs of production it becomes necessary for a producer to substitute one factor of production for another, or one quality of a factor for another quality of it, or one type of raw material for another type to produce the commodity. If labour becomes too costly the producer may

have to substitute machinery for labour either by using labour-saving devices or by having automatic machinery. This is substitution of one factor of production for another. He may substitute the men labourers by female labourers or child labour. One quality of machinery may be substituted by another quality and make. The producer may substitute long-staple cotton for short-staple cotton and vice versa. All these changes are made with a view to reduce the costs of production. They become necessary because the price of some factors might be more than their marginal productivity and they may not be economical while the price of others might be less than their marginal productivity and they may therefore be preferred by the producer. The substitution of one factor for another takes place on the basis of relative marginal productivities and prices of different factors and the producer selects the cheapest and the most efficient combination.

Substitution is made possible by the fact that for production various factors are needed and the same result can be secured by combining them in different proportions. A type-writer requires a number of factors for its production. The same number of type-writers can be produced by taking either 100 labourers and 5 units of machinery or 40 labourers and 7 units of machinery. In this case two machinery have replaced 60 labourers. This is called substitution. It has been made possible because the proportion in which factors can be combined is variable. This is known as a case of variable technical coefficients. But in some cases the proportion in which factors can be combined is fixed. There is one driver to each taxi or one typist to each type-writer. This is known as fixed technical coefficients. Even here substitution between different qualities of one factor is possible but one factor cannot be substituted for another. Substitution requires that the producer should know the marginal productivity and price of every factor which he uses and of every other which he does not use, so that he can make this choice. If the producer is ignorant or careless the process of substitution will be hindered. It also assumes that technical difficulties do not make substitution impossible. Sometimes it might happen that some particular factor is cheap i.e. its price is below its marginal productivity but the producer cannot use it because the fixed machinery and equipment will make such use impossible.

Suppose the price of short-staple cotton goes down and it becomes relatively cheaper than long-staple cotton but the producer may not be able to use it because his machinery would not allow it. The attitude of trade unions, in the case of labour, might make such a substitution impossible. In Bombay the cotton millowners decided that labour must be replaced by machinery by making each labourer mind a larger number of looms but the trade unions opposed it. The substitution would have reduced the costs of production but it was made impossible by the resistance offered by one factor of production. Substitution assumes that there is enough time to make the necessary change. Substitution cannot be made in a very short period; it requires a long period of time for its execution. But in spite of these difficulties there is a clear tendency for substitution and the producer does it whenever he gets an opportunity. His aim is to reduce the costs of production and he sets about this process by comparing the marginal productivity and price of different factors.

What is 'marginal productivity'? The marginal product "in a state of equilibrium is the addition which is made to the product of a firm when a small unit is added to the supply of the factors available to that firm, and the organisation of the firm is adjusted to the new supply" (J. R. Hicks). If with fixed machinery 100 labourers can produce 200 units of the commodity and 101 labourers can produce 203, 3 is the marginal productivity of labour. This is in terms of physical units. If we multiply the number of units produced i.e. 3 by the prevailing price for these units, let us say, Rs. 2 each, the "value of marginal product" would be Rs. 6. It is this value of marginal product which the 'producer compares with the price of the additional labourer who has been responsible for producing this additional value. He tries to bring about the condition in which the ratio between the marginal productivity and price of each factor is the same. In equilibrium i.e. in a condition when there is no further inducement to change the producer will have a picture as shown below :

| Marginal Productivity of Factor A | Marginal Productivity of Factor B |
|-----------------------------------|-----------------------------------|
| Price of Factor A | Price of Factor B |

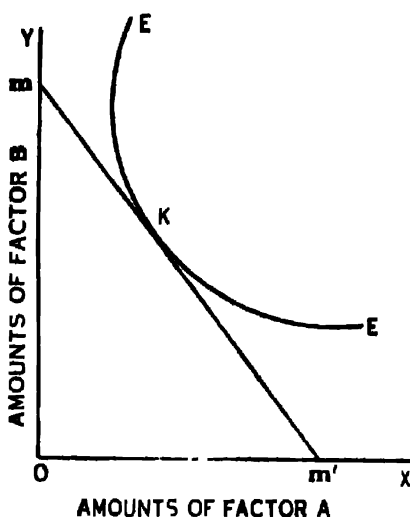
If he uses more than two factors this relation of proportionality must be satisfied for all the factors. He will use that amount of each factor at which this relation is satisfied. Suppose the marginal productivity of factor *A* is greater than its price while that of factor *B* is lower than its price as shown below :

| Factor | Marginal Productivity | Price per unit in Rs. |
|----------|-----------------------|-----------------------|
| <i>A</i> | 83 | 44/- |
| <i>B</i> | 30 | 55/- |

This is not a satisfactory condition because the producer is losing on factor *B* and he will dismiss some units of it. In place of them he will take additional units of factor *A* on which he gets a net advantage. As the producer dismisses some units of factor *B* its marginal productivity rises and as he takes additional units of factor *A* its marginal productivity falls. This process of dismissing the factor *B* and taking more of the factor *A* will go on till by a gradual increase the marginal productivity of *B* becomes equal to the price of *B* and by a gradual fall the marginal productivity of *A* becomes equal to the price of *A*. At a point when the relation between marginal productivity and price for each factor is equal further substitution will stop. The producer will have no further inducement to do it. If he continues to substitute the factors after this point the marginal productivity of *A* will fall below its price and the marginal productivity of *B* will rise above its price. This would not be a desirable situation. Hence the point of equilibrium is that at which this relation of proportionality between marginal productivity and price is satisfied for each factor.

For understanding this process it is essential to appreciate the point that the adjustment will come about by a change in the marginal productivity and not price. This is so because we are considering a single producer in a competitive market and the prices of commodities and of factors of production are not within the control of any single producer. It cannot either rise or fall whether he purchases a few more or less units of factor *A* or *B*. As by our taking a bucket-full of water

from the sea its level cannot be disturbed so the action of one producer cannot change the price. But his action will change the marginal productivity of the factors in his firm. When more units of *A* are taken the marginal productivity of *A* falls because then there are more units of *A* relatively to the other factors. When less units of *B* are taken the marginal productivity of *B* rises as there are then less units of *B* relatively to the other factors.



This condition of proportionality between marginal productivity and price can also be shown by a diagram. In the figure the curve *EE* is an equal product curve i.e. the different points on the curve show the different combinations of factor *A*, shown on the *x*-axis, and factor *B*, shown on the *y*-axis, needed for producing the same amount of a commodity which the *EE* curve represents. This curve *EE* shows the relation :

$$\frac{\text{Marginal Productivity of Factor } B}{\text{Marginal Productivity of Factor } A}$$

The line *mm* shows the price of one factor in terms of the other and shows the relation :

$$\frac{\text{Price of Factor } B}{\text{Price of Factor } A}$$

These two meet at the point k where the producer is in equilibrium. At this point the following relation is satisfied,

$$\frac{\text{Marginal Productivity of } A}{\text{Marginal Productivity of } B} = \frac{\text{Price of } A}{\text{Price of } B}$$

and this is the same thing as :

$$\frac{\text{Marginal Productivity of } A}{\text{Price of } A} = \frac{\text{Marginal Productivity of } B}{\text{Price of } B}$$

In this way, at point k the relation of proportionality between the marginal productivity and price for factors of production is satisfied and here the producer is in equilibrium. There is no further inducement to substitute one factor for another.

CHAPTER XIX

THEORY OF POPULATION

The history of mankind reveals that the problem of population has been one of considerable importance from very early times. Even amongst the savages we perceive the working of a law that regulated the growth of numbers and kept them within limits. But conscious efforts, in a more or less vague form, to direct individual conduct in this sphere in the light of social or political necessity can be traced from times when human beings became civilized and developed a communal life. The growth of communal life subordinated individual conflicts to social or communal conflicts. Now it is a conflict for supremacy between organized communities though individual conflicts still remain. The supremacy of a group, a community, a nation or a race naturally depended upon the health, strength and numbers of that social organism. Consequently we notice religious and moral injunctions, fortified by custom and tradition, to ensure the numerical and physical growth of a community. The early lawgivers stressed the spiritual and material benefits that accrued to parents who produced sons—the emphasis on the male sex is understandable in an age when rights depended upon might. The laws of Moses or of Confucius enjoined upon their followers the duty to produce a son which alone ensured salvation. So also amongst the Hindus where the belief is that the gates of Heaven are closed to a person whose funeral rites are not performed by his son and who does not marry a daughter in his life-time. Amongst the Greeks and the Romans there was legal and political pressure to increase the growth of numbers to provide a continuous flow of able bodied soldiers and administrators to perpetuate their sway in distant lands. Nor was the need of selective breeding ignored—the Spartans followed it with vengeance. The laws of marriage amongst the Muslims reveal unmistakable signs of subordinating social and religious customs to an expansionist population policy.

It is, however, customary in the exposition of the theory of population to begin with Malthus. This simple clergy

man of Haileybury published anonymously in 1798 his famous *Essay on the Principle of Population as it Affects the Future Improvement of Society*. It was chiefly a statistical study of population from which Malthus arrived at 'the Law of Population' that has aroused so much controversy. As a result of his careful study he came to the following three important conclusions :—

I. The growth of population is limited by the means of subsistence.

II. Population has a tendency to increase much faster than the means of subsistence. Its growth is, therefore, prevented by powerful checks which nature provides.

III. What had happened in the past was likely to happen in the future, that is, the growth of population, unless restricted by man will be prevented by "positive" or "repressive" checks. He, therefore, advocated "preventive checks", that is voluntary moral restraint.

His first proposition is almost a truism. It is a self-evident truth that the size of the population is limited by the available means of subsistence, which fix an ultimate limit beyond which population cannot expand as the excess would not have food to eat and live on. This is true of the vegetable and animal kingdoms as well where also any excess population beyond the means of subsistence available to it must die of hunger and starvation. So also we find amongst the savages that a large number of children or weak and decrepit persons actually die of starvation. In times of acute famine deaths due to hunger have been known to occur on a large scale in India about two hundred years ago and in China even in recent times. But in large parts of the world famines today are not food famines—thanks to the great improvements in the means of communication and transportation—but famines of purchasing power. Consequently, governments open relief works to provide a means of livelihood to the famine-stricken people. Incidentally it may be mentioned here that in 1943 we witnessed in Bengal the rarest of phenomena in modern times—men, women and children—whole families dying of sheer starvation.

The means of subsistence which are available at any time ~~may be said to be Nature's demand for population~~—the larger the means of subsistence the greater the population that can be fed. Thus Nature's demand for population may be said to expand or contract with the increase or decrease in the means of subsistence. But what are we to understand by means of subsistence? If it implies the minimum physical requirements of man to enable him to exist then life at such a stage is brutish indeed. It is devoid of all cheer and the nobler and finer aspects of life. There is a lack of culture and refinement. Man becomes one with his genus—a plain, simple animal. Man acts like a slave to nature and not as a master—a role which he tries to achieve in his struggle with the forces of nature. The modern man is not prepared to accept the position of existence as analysed by Malthus. The means of subsistence vary with the standard of living to which a community is accustomed. This standard of living is itself not fixed. It varies from time to time and from place to place. Even at a given place and a given time there are different standards of living for different people—the rich, the poor and the middle class and their numerous sub-classes. Even if these difficulties are ignored there is yet another hurdle. Malthus's proposition assumes an equitable distribution of the means of subsistence. This assumption is not true and consequently the limits to the growth of population can not be set by the total means of subsistence available to a community but depends upon the distribution of wealth and income in that society. This places a limit on the growth of population much earlier than an equitable distribution of the means of subsistence would do. Nor does the proposition consider the eugenic aspects of the growth of population. This can only be ignored with great detriment to national progress. The proposition of Malthus only remains true in a broad way in the sense that physically population cannot grow beyond the amount of food available. But that low level of existence is never reached except perhaps in the case of poor, backward peoples of Eastern countries. Even there man does not live by bread alone, least of all in countries to which Malthus particularly confined his study. Finally, it may be argued that even amongst animals and savages where literally many die of hunger this result follows not because of excess population which can not

be supported by the means of subsistence but because of their incapacity to expand production and thus increase the means of subsistence, which themselves are variable like the size of population. Yet it cannot be denied that the upper limit to the size of population is determined by the supply of food.

The second proposition of Malthus lays down that population has a tendency to increase much faster than the means of subsistence. Its growth is, therefore, obstructed by "positive" or "repressive" checks. By a study of facts Malthus rightly came to the conclusion that every people has a tendency to multiply very fast and population would have grown enormously had it not been kept in check by disease, war, infanticide, or prudence in sexual relations. Man has been endowed by nature with a powerful sexual instinct which leads to vice or misery if it is allowed full scope for satisfaction. This instinct has such a strong hold over mankind that when the means of subsistence increase men become less prudent and multiply with great rapidity. When the growth in numbers takes place a great strain is placed on the means of subsistence. They prove inadequate to provide sufficient nourishment to the increased population, which is consequently starved and under-nourished. This ill-fed population is susceptible to disease or the search for food may lead to bloody wars causing deaths on a large scale in either case. Or due to inadequate resources to feed their offspring parents may resort to the inhuman practice of infanticide. Or they may become wiser in their sex relations and exercise restraint on sexual intercourse. All these causes result in a reduction of numbers so that the means of subsistence become adequate. Thus a period of distress and misery is followed by a period of comparative ease and comfort. This period of comfort would again be followed by a period of misery unless deliberate attempts are made to prolong it. This can be done by scientific or organisational improvements in the technique of production so that even if population increases there are adequate means of subsistence and consequently no starvation or under-nourishment. But this could give only temporary relief. Or people may be more prudent in sex relations. They may exercise moral restraint or reduce the birth rate by postponing the age of marriage. Or they may raise their standard of living permanently and

make it rigid so that people would not like, unless their incomes increased, to undertake the responsibilities of parenthood that necessarily brings down the standard of living. The tendency of population to outstrip food-resources, however, remains, but is kept within control by the measures outlined above. The mere fact that children are a charge on the purse of their parents is by itself not a sufficiently powerful incentive to the regulation of the growth of numbers.

Malthus was awe-struck by the striking rapidity with which human beings, if unchecked, multiply and the comparative slow speed with which the means of subsistence can increase. He found that whereas population, if unchecked, grows in a geometric progression the means of subsistence could, *at the most*, expand in an arithmetic progression. Taking 25 years as the period of time during which the increase in population and means of subsistence takes place and assuming x to be the population and y the means of subsistence they would grow in the following manner:—

x $2x$ $4x$ $8x$ $16x$ $32x$ $64x$ $128x$ and so on

y $2y$ $3y$ $4y$ $5y$ $6y$ $7y$ $8y$ and so on

That is, during every period of 25 years population doubles itself whereas means of subsistence only increase by a constant amount (y) in each of these periods. So far as the first series is concerned it may be taken as correct because it represents a biological law. If population is to double itself in 25 years it only means that one married couple should produce enough children so that at least four reach the marriageable age. Even if we concede that out of every three children born one dies in infancy a married couple need produce only six children during the period of their conjugal association so that at least four will attain the marriageable age. The birth of six children, where the parents exercise no check on their sexual instincts, is certainly not an over-estimate. It is true that in most Western countries a large number of married couples do not produce so many children but this is due to deliberate efforts at birth control. Unchecked by any restraints the number of children to a family would surely be more than six, not less. Parents are known

even in Western countries—not to talk of India, China etc.—to produce over a dozen children. The assumption of Malthus that population if unchecked, doubles itself in 25 years is certainly not an over-estimate. He may, if at all, have erred on the other side. It may, however, be objected that the period of a generation should not be 25 but 30 or 33 years. That, however, is a minor point and does not diminish the force of his arguments.

The series representing means of subsistence has, however, been criticised more vehemently. Means of subsistence include the vegetable and animal products that multiply at a much faster rate than human beings. A single seed multiplies several fold. So also poultry, goats, fish, pigs etc.—all of which are used as human food. But their increase is also limited by proper kind of nourishment and struggle for existence. Then we should consider only the *increase* in the means of subsistence from year to year. If on an area of land one maund of seed multiplies hundred-fold in a harvest year we should consider how many times it again multiplies in the next year and the difference between the two really represents the increase in production. If the area of fertile agricultural land was unlimited vegetable species would or could multiply at a much faster rate. Since, however, the area of fertile agricultural soil is limited the vegetable or agricultural produce does not increase several fold from year to year. When Malthus was talking of increase in the means of subsistence he was really thinking of the tendency to Diminishing Returns although he does not specifically mention it. Realising that the area of agricultural soil is fixed and can only be increased at rising cost he rightly thought that a given plot of land could not double the produce, after a certain stage of production, even if double the resources were applied to it. This is clear when he says, "Let us then take this for our rule, though certainly far beyond the truth; and allow that whole produce of the island (England) might be increased every twenty-five years (that is with every doubling of the population) by a quantity of subsistence equal to that which it at present produces." In the subsequent exposition of his theory, however, Malthus stuck to the word 'arithmetical progression' although it is clear that what he meant was that after the population of England was doubled the produce may

also be doubled but this doubling of the produce could not be repeated with a further doubling of the population owing to the Law of Diminishing Returns, as we would put it in modern terminology. It is true that Malthus did not, and perhaps he could not, anticipate the remarkable improvements in the means of transportation and the cheaper sources of food supply in the New world which has enabled England to increase its food resources at a comparatively low cost and thus maintain a six-fold population with a comparatively higher standard of living. These unforeseen developments make his proposition rather out of date and out of place though it still remains true that if sexual instinct is not checked the human race will multiply with a frightful rapidity and will outstrip food supply. Due to insufficient nutrition the "positive" or "repressive" checks will then operate to reduce the population.

The first two propositions of Malthus naturally led him to the ~~third~~. By a careful historical study he came to the conclusion that unless some sort of restraint was exercised population would tend to multiply rapidly when it is unchecked by pestilence, war etc. He divided the checks on population growth into "positive" or "repressive" and "preventive". By "positive" checks he means those measures that reduce population immediately by increasing the death rate such as devastating wars, diseases, infanticide etc. "Preventive checks", however, tended to diminish the birth rate and thus ultimately reduce population. They are moral restraint or any deliberate and artificial means adopted by man to reduce births. In all living organisms there is, on the one hand, a desire to propagate their species. On the other, nature places a limit to their expansion by the amount of sustenance it provides. This struggle for life leads to the survival of the fittest and the rest, who are in excess, are not able to reach maturity. This is a biological law and applies to the animal kingdom where the high rate of mortality ensures that they do not become excessive. It speaks to the credit of Malthus to have realised this even before his observations were reinforced by the teachings of biology. Where birth rate is high the death rate is bound to be high. Malthus realised that unless population was kept in check by voluntary restraint the old checks "vice and misery" would come into opera-

tion. But since man has foresight and is a rational animal it was possible for him to adopt more humane methods so that the old and barbaric checks to population growth were held in abeyance. Man's foresight should help him not to have more children when he knows that they are going to die due to an inevitable biological law. Through the exercise of preventive checks it was therefore possible to prevent, or at least mitigate, the misery due to over-population. Thus conscious efforts on the part of man can prevent misery and hence he pointed out that the restriction of population should be the result of deliberate choice rather than a necessity forced by the law of nature. This was indeed a great advancement and Malthus laid the germ of the modern theory of population which regards the growth of population as a matter of conscious and deliberate choice and thereby makes it subservient to the attainment of social and political objectives. Malthus pointed out, though not very clearly, the necessity of adjusting the growth of numbers to a social objective. This approach was infinitely superior to the general attitude that birth of children is a gift of God over which man could possibly have no control—a view that still has many adherents in India and other Eastern countries. The movements in the growth of population are taken to be the result of Divine Law. Malthus was himself a clergyman and his own conclusions did not fit well with his belief in the beneficence of the Almighty but he regarded these as injunctions from God to lessen human misery which resulted from the improvident habits of man.

By "moral restraint" Malthus did not mean complete abstinence from sexual intercourse. Nor did he advocate celibacy—he realised that it would only lead to greater evils which may prove to be worse than the disease they were intended to cure. He would not permit any outrages on morality beyond the bonds of marriage but wanted the date of marriage to be postponed till a man's income increased sufficiently to enable him to support a family. His Christian faith and teaching completely rejected the enjoyment of sexual pleasure outside the marital bonds and he was, therefore, opposed to voluntary sterilization or to the institution of a class of professional prostitutes to satisfy the lust of man. He advised man to "restrain our passions within the bounds of reason" and strongly

upheld the virtue of chastity. But his practical commonsense made him fully realise that no amount of preaching on the desirability of having good morals would make all men moral. It was an Utopian idea and lapses of morality were bound to occur. Realising the impetuosity of sexual instincts he feared that not many people would follow his advice. Consequently the effectiveness of moral restraint would be very limited and he was therefore forced to condone the satisfaction of sexual instincts that are not accompanied with maternity provided the methods involved committed no outrages on morality. He made this concession as he regarded this slight departure from his moral principles as a smaller evil. The rule of conduct is therefore not of complete chastity or absolute purity but "It is clearly our duty gradually to acquire a habit of gratifying our passion, only in that way which is unattended with evil"*. He admitted, "I have not the slightest hesitation in saying that the prudential check to marriage is better than premature mortality"***.

There is much truth in the laws of Malthus but the conclusions he drew were unduly pessimistic, possibly because he could not foresee future developments. He was perfectly right in pointing out that the growth of population was restricted by "positive and preventive" checks otherwise the human race would multiply at terrific speed. It has been estimated that a single married couple increasing at the rate of one percent per annum would in a period of 2000 years multiply itself to a figure which will be equal to the present population of the world. The world is certainly older than 2000 years and the rate of reproduction—if left unrestricted—would not be below one percent and yet the human population has not increased to these frightful figures. This is a convincing proof that population has been held in check by positive and preventive measures. In the case of animals the preventive checks are inoperative. But man is wiser than animals and hence the growth of human population is restricted not merely by the working of the inexorable laws of nature but also by conscious, deliberate effort on the part of men in the light of social, moral, or legal pressure exercised on in-

*Page 500

**Page 560

dividual choice and freedom. Though population may not outstrip the means of subsistence yet the theory of Malthus enables us to realise that increase of population unaccompanied by increase of productive resources is bound to have adverse consequences on economic prosperity and would act as a check to economic progress. His theory suggests that in the interest of economic progress the growth of population should be restricted when the productive resources of a community are not expanding. But Malthus was overwhelmed by the gloomy spectre of a rising population and he completely failed to see the other side of the picture that in certain circumstances the progress of mankind may be checked by the slowness in the growth of population. To enable the fullest utilisation of natural and material resources it is essential that population should not fall below a certain level. At times national progress is accelerated by an increase in numbers. Again, the approach of Malthus made him assign an undue importance to the population factor in a nation's economy. He failed to realise that falling standards of living or distress may be due to other deep-rooted causes than the mere growth of numbers. The last economic depression of the thirties drew attention to the crisis of plenty. Wheat was burnt and coffee thrown into the sea just because more had been produced than could be sold at a profitable price. The advocates of a revival pleaded restriction of cultivation and of all-round production to bring prosperity to a world that was suffering from over-production. It was not a population crisis, it was a production crisis. The means of sustenance had increased too much and the remedy suggested was not population control but production control and yet that was an incorrect diagnosis. It is absurd to suggest that mankind produces much more than it can consume, particularly when large masses of the people are living on the starvation line. It was not a crisis of production but a crisis of maladjustment between production and purchasing power. On the one hand, producers had more than could be profitably sold. On the other, people were under-nourished and had not the means to purchase the surplus produce. There was apparently a need for distribution control so that purchasing power was placed at the disposal of those who needed it most.

Malthus was right when he pointed out that the satis-

fraction of the sexual instinct led to the procreation of the species but he failed to realise that the sexual and the reproductive instincts are not the same. He was probably scared by the fact that nature had united the two instincts by giving them the same organs but though he realised that it was possible to separate sexual pleasure from the reproductive instinct he failed to work out this hint fully. Consequently he confused between these two instincts and while the sexual instinct is common and is irresistible in a very large number of cases he wrongly assigned that characteristic to the reproductive instinct. Obviously he could not clearly differentiate between the two. At least he did not carry the differentiation to its logical end. The two instincts are governed by entirely different considerations and strictly speaking the sexual instinct plays a very minor part in the desire to increase the size of the human race. A large number of people do not like to be burdened with the responsibility of parenthood everytime the sexual instinct is satisfied. Even amongst the animals we find that they get rid of the burden of parenthood as early as possible. We will not be far wrong to conclude that while satisfying the sexual instinct human beings do not usually like to be burdened with the responsibility of rearing children. The reproductive instinct depends on social, religious and political causes and is moulded by the exigencies of time and place. It is thwarted by the selfishness or the prudence of parents who do not want or cannot afford to bring up a family. It is also checked by the desire of women to seek economic independence or the dread of the pains and pangs of child birth, or by their desire to preserve their form—the beauty of the face and the curves of the muscles. In brief the considerations that influence the reproductive instinct vary from person to person and change with the time. In fact the great success which Western countries have achieved in separating the two instincts through development and progress in science is a wonderful achievement which has completely falsified the fears of Malthus. Most of the advanced countries are today not suffering from over-population as Malthus apprehended—in some cases, on the contrary, there is a fear that the birth rate is so low as to be actually tending to reduce population. The desire of birth control is, perhaps, because of economic necessity, such a common phenomenon today that even in Eastern

countries there is need of *encouraging* selective breeding. Malthus failed to see this because he was overwhelmed by the fear of increasing population.

Nor did Malthus foresee the enormous expansion in the world's productive capacity which has been rendered possible by specialization and scientific discoveries. This has meant that in spite of the growth in numbers the wealth of the people has been rising enabling them to improve their standard of living. It is true that the growth of numbers has been considerably restricted due to voluntary control but this is then a most common development in every part of the world. Even in Eastern countries the middle and the well-to-do classes have come to regard a large number of children as a curse of God but due to ignorance and faith in Providence they accept the result in a spirit of resignation. But some restraint is there though the use of contraceptives is, for various reasons, not so common here as in the West. Perhaps the intellectual and material progress that mankind has achieved reduces sexual propensity - or to be more correct, reduces the tendency to produce children as it makes them realise the responsibilities of parenthood more fully. There is a tendency to a declining birth rate because of greater consciousness of parental responsibilities with the progress of civilization. It must, however, be admitted that Malthus would have unreservedly condemned many of the modern devices that enable the satisfaction of the sexual instinct without involving the responsibilities of maternity.

The Theory of Optimum Population

The population of a country is never stationary. It is continuously changing. It may be increasing or even decreasing in numbers depending upon the prevailing birth and death rates in the country. The Theory of Optimum Population lays down an objective criterion in the light of which the change in population should take place. At times it may be desirable to increase population just as it may be desirable to decrease it at some other time. In either case the change should be directed towards the optimum. The optimum point is that which enables the community to produce the largest amount of goods and services per head.

It is not a point which enables maximum total production of wealth in the community but it considers as its guide the average share of each inhabitant out of the total produce. When by an increase in population the average produce tends to rise the increase is desirable. But when it leads to a fall in the average real income, then an increase in population is not desirable. If, on the contrary, a decrease in numbers increases the average share of each then such a decrease is a movement towards the achievement of the optimum point. At the optimum point the average real income per head is the highest. Any increase or decrease in population at that stage reduces the average and hence is not desirable. It is true that the aggregate real national income will increase at this point with an increase in numbers but the increase in aggregate income per additional person will be less than the existing average real income and hence it will tend to reduce the average share of each. An increase in population under these conditions is not justifiable according to the Theory of Optimum Population because it maintains that the ideal or the most desirable population is that which maximises the average real income of the people.

The theory is based upon the Law of Diminishing Returns which states that since factors of production are not perfect substitutes there is a point after which average returns tend to diminish if one or more factors of production are kept fixed and others are increased. This happens because so long as the fixed factors are not fully used the average cost is falling, that is, when the fixed factor is constant and other factors are increased the fixed factor is more fully used without any extra cost. Consequently, output increases in a greater proportion than the increase in variable factors. But when a point is reached where the fixed factor is fully used the average output tends to diminish with an increase in variable factors as the increased variable factors cannot be fully worked with the limited quantity of the fixed factor. This happens because there is one ideal combination in which the factors of production should be combined so that each unit of a factor is neither over-worked nor under-worked, that is, each factor is employed to its full capacity. This is the point at which average cost is lowest or production is at the optimum level. Taking the entire

productive resources of a country as a whole—its total wealth including concrete objects, animals, forces of nature etc.—we can say that with this given quantity of non-human resources there is a certain population which will maximise the average output, that is, at that level of population all the resources—human as well as non-human—will be fully worked and so the average output is maximum. This can be illustrated by the following schedule:—

| Total population (which also shows the increase in units of population) | Aggregate Real income in terms of goods and services. | Average Real In- come. | Marginal Real In- come |
|--|--|------------------------------|------------------------------|
| 10 | 500 | 50 | |
| 11 | 572 | 52 | 72 |
| 12 | 648 | 54 | 76 |
| 13 | 715 | 55 | 67 |
| 14 | 798 | | |
| 15 | 870 | 58 | |
| 16 | 912 | 57 | 42 |
| 17 | 935 | 55 | 23 |
| 18 | 951 | | 19 |

We see that the aggregate real income is throughout rising and in the table above this is maximum when the total population is 18 units. But the optimum population is 15 units because that gives the highest average real income which begins to decline if there is any further increase in population. After this point the human resources are too large for the non-human resources to fully employ them (human resources). This naturally supposes that the capital resources including forces of nature, animal power etc. of a country are fixed. But in a dynamic world they themselves are changing. This is absolutely correct and points to the conclusion that the optimum is not fixed but is itself oscillating due to changes in capital resources which take place simultaneously with changes in population. This does not, however, inviolate the theory which states that the optimum population is that which maximises the average real income with given non-human resources. The changes in the amount of capital resources only make the task of finding and reaching the optimum more difficult. It does not

make the optimum level of population an illusory concept. The point of optimum level population oscillates like the pendulum of a clock but it is determinate though obviously due to dynamic conditions of the world it is more difficult to be achieved. It should, however, be emphasised here that the above discussion presumes that the amount of work done by each working member of the population is not changing as also the number of hours worked by him. It also presupposes that the effective supply of workers in a given population does not vary due to changes in the age at which people start work or retire from work or due to change in the number of members in a family that seek work. Changes in any of these will bring about results similar to changes in population. If due to increased efficiency or organisation a worker does 20 per cent more work in the same fixed hours of work the result is same as would follow a 20 per cent increase in the number of workers with their efficiency unchanged.

(The theory gives us an objective ideal according to which changes in population should be controlled and lays down that individual conduct should be so regulated as to achieve a net birth-rate that leads to the attainment of maximum average real output. It is clear that population will not automatically tend to reach the optimum figure. There is, therefore, need for a conscious deliberate population policy that will regulate the growth of numbers in the light of the objective. The merit of the theory lies in this that if the attainment of maximum average real income is regarded as a desirable optimum then it provides a working criterion for the direction in which population should vary at any given time. It must be carefully noted that any change in the effective number of workers through a change in the birth-rate obviously takes a long period of time and is realised only when the new babies grow to manhood. Consequently we may have a situation where the population at present is too much or too little for the existing resources but is likely to become optimum due to increase or decrease in capital resources during the next decade or so. In such a case it will obviously be unwise to attempt to vary the size of the population as any such change by the time it materialises will, due to changes in the stock of capital, itself move the population away

from the optimum point. Hence, any policy directed to attain an optimum level of population should take account of the changes that are taking place or are likely to take place in the capital resources of the community. But the knowledge of such an optimum point is not enough. There must be conscious efforts to regulate the growth of numbers to achieve the optimum level of population. Direct state control to regulate the birth rate will be most difficult to operate and at the same time state interference in this phase of family life would be exceedingly repugnant to the people. Imagine the idea of a government officer issuing directives to individual married couples to regulate their marital connections with the object of producing children according to targets laid down by him. Nothing could be more offensive or more impracticable. The births in individual families, where there are conscious efforts to regulate them, depend upon various motives that influence the parents' wish to have children. But the determination and propagation of a working scientific criterion is important and it can be used to enlighten the people that the increase in the birth rate will tend to increase or diminish the general standard of living. One of the obstacles to the regulation of individual conduct in the sphere of sexual relations in the light of social necessity is the ignorance of the social objective which obstacle at least will be removed by laying it clearly before the people. But even if parents know the social objective they may not like it or might find it difficult to regulate the growth of their family in the light of that objective. An individual's personal interest plays a very important part in this sphere. He is not concerned with the general standard of living but with his own income and the responsibilities of parenthood. Even if the population is below the optimum individuals may abstain from having large families due to the fear of a reduction in their own standard of living. They may still prefer to have small families so that they can provide good education and adequate comforts to their children and also give them a better start in life. Thus we see that, on the one hand, complete state control in the matter of accepting responsibilities of parenthood is difficult and repugnant. On the other, the mere declaration of the need to produce more or fewer children is not sufficient to achieve adjustment of numbers to the optimum level. Consequently, the state must take effective measures to influence the decision of

individual parents through liberal child allowances when large families are to be encouraged and withdraw them or impose some penal taxation when decrease in numbers is desirable. The totalitarian countries—Nazi Germany, Fascist Italy and Communist Russia—have not only resorted to such devices but have bestowed greater honours on parents who help the state in attaining its ideal. In the U. S. S. R., for example, where women are encouraged to have more babies in the interest of the Fatherland a mother of fourteen children was recently awarded the Order of Lenin.

The Theory of Optimum Population suffers from the defect that it completely ignores the distributional effects of an increase in the National Dividend or in the average real income. It lays down that an increase in population is always desirable when it leads to higher average real income. But the total wealth and income of a country are not equitably distributed. It is not necessary that the increased National Dividend, which raises the average real income, should place more income in the hands of the masses and thereby raise their standard of living. The Theory presupposes that the existing scheme of income distribution is desirable, or at least satisfactory, and further that it is likely to remain unaffected for a considerable time in the future. It is quite possible that the increase in aggregate real income due to rising population may actually be concentrated in a few hands and in spite of an increasing average real income the lot of the masses may be more miserable because of distributional defects in the existing socio-economic structure of the country. A change in the scheme of income distribution in a community may itself mean a higher standard of living for the people in general even though the average real income may not be maximum or may not be rising. Besides the production of maximum average real income may involve conditions of work incompatible with the prevailing social conception of a decent life. Consequently, the criteria of optimum output will vary with the aims and objects of the social structure we have in view. It may, however, be conceded that other things being the same a higher level of average real income is desirable for a community.

Another weak point in the theory is that it takes

a very narrow view—the purely materialistic view—of the social objectives. Even materialistic economists or philosophers will not agree that maximum average real income is the final objective of social policy. Indian thought, with its predominantly spiritual bias, has a stronger objection. The individual or social ideal is, no doubt, maximum happiness but this is not synonymous with maximum wealth. A certain amount of wealth or income is necessary for happiness but maximum wealth may not lead to maximum happiness. Happiness is a much broader conception and depends upon many obscure and mystical causes. Man does not work to satisfy his material wants only. He needs some spiritual satisfaction as well. The materialistic ideal cannot be permitted to lead to the moral or spiritual degeneration of the people. Man also needs a sound physique and immunity from illness to enjoy his spiritual and material equipoise. The theory does not sufficiently emphasize the eugenic aspects of the growth of population which is desirable in the interest of national progress and betterment. Maximum average real income should be enjoyed by healthy, intelligent, educated and conscientious people not a dull mass of sordid individuals. Consequently, selective breeding should form an essential part of any sound population policy.

Even if we take a purely materialistic viewpoint maximum return per head cannot be our guide under all conditions. A nation is fully justified in having a population policy that enables it to achieve the national ideal that it has deliberately chosen for itself though that may lead to a smaller average real income. Hitler and Mussolini had faith in war and followed an expansionist foreign policy. They believed and advocated that a growing population was essential for national supremacy. With their given and accepted ends Nazi Germany and Fascist Italy were thoroughly justified in following a population policy that did not maximise average real income but rather increased the numbers of healthy able-bodied citizens. The policy being the result of conscious choice was certainly more desirable from their points of view as it contributed to the making of the nation. In countries like India where stronger emphasis is laid on plain living and high thinking

considerations of average real income must necessarily occupy a subordinate position. Population is not a question of relating numbers to the amount of food available or to the average real income but of adjusting the growth of numbers to an accepted social end*. There cannot be one population policy that will suit all times, all ages or all communities. The correct population policy for a nation depends on the social objectives that it has set before itself and the success of the population policy lies in adjusting the growth of numbers to such a social purpose. It is, however, clear that population cannot be allowed to be a matter of unconscious growth; it is essentially a subject of conscious and deliberate regulation of numbers in the light of an accepted social purpose. Secondly, since population is a social problem its solution cannot be left to the initiative of individuals according to their own conveniences. Policies have to be evolved that aim at directing individual conduct in the light of social necessity so that adjustment of numbers to the social objective is attained through intelligent action on the part of individuals. Unluckily in India individual efforts to regulate births have been negligible. The government too has so far not been able to lay down an intelligent and acceptable population policy. It is a pity that as yet we as a people have failed to realise the importance of following a conscious and well-laid-out population policy. The practice of birth control is rare and modern devices that enable the satisfaction of the sexual instinct without involving the burden of maternity unknown to large masses of the people. Yet no scheme of social uplift or expansionist economy can have lasting success in a country where people multiply with frightful rapidity. It is essential that the Planning Schemes of the Government should include the control of population so that the schemes of raising the standard of living of our people are not thwarted by an enormous increase in numbers.

* These criticisms can be met, however, by using the term real income in the broadest sense so as to include all desirable objectives in which case it will be synonymous with accepted social end.

CHAPTER XX

RATIONALIZATION

Rationalization is an effort to increase the efficiency and reduce the costs of production. Any method or device which has this aim becomes a part of this huge process. A number of definitions have been given for this process but none is complete and satisfactory. According to one "the methods of technique and of organisation designed to secure the minimum waste of either effort or material" are called rationalization. According to another, rationalization means 'the scientific organisation of labour, standardisation both of material and of products, simplification of processes and improvement in the system of transport and marketing'. According to yet another definition, "Rationalization means that instead of traditional processes, established routine, empirical rules and improvizations, use is made of methods that are the fruit of patient scientific study and aim at the optimum adjustment of means to ends, thus securing that every effort produces the maximum useful results". Such definitions can be multiplied but that would not serve a useful purpose. We may rather classify the various processes which constitute rationalization into three groups. The first one covers all those processes which involve the replacement of labour by machinery. We now give this the name of mechanisation. The second group consists of all those schemes of reorganisation which are introduced by firms to prevent cut-throat competition, over production and falling prices. The third group consists of devices to quicken the pace of work and to make labourers put in the largest amount of work in the shortest period of time. This is known as scientific management.

The need for rationalization arises to a great extent from the defective working of the capitalist system under competition. If competition were really perfect most of the difficulties would probably not arise, but in actual practice what we have is imperfect competition. The result is that there is periodical over-production, unemployment and trade depression leading to much hardship to producers, consumers and labourers. Even when the system is not suffering from trade

depression the producers indulge in cut-throat competition to secure the market for their own goods and to strangle the rivals. This causes a huge waste. The interests of the consumers and labourers are not looked after properly. The capitalist employer lashed by the profit motive does not care whom he tramples under foot.

Schemes of rationalization aim at removing those features of the capitalist system that are prejudicial to the interests of producers. They prevent cut-throat competition, over-production and falling prices which are injurious to the producers. They aim at reducing the costs of production which, with given market prices for their goods, increase the producers' profits. In contrast to this, economic planning safeguards the interests, or at least aims to safeguard the interests of producers, consumers and labourers. The other major difference between rationalization and planning is that while the former is mere patch-work the latter is comprehensive and all-pervasive. But the aim of both is to re-organise partially or wholly the economic system.

Mechanisation

In this, machinery replaces human labour increasing productive efficiency. If 100 labourers and 5 units of machine produce 200 units of any commodity the effect of rationalization would be to produce the same number of units of the commodity i.e. 200, with the help of, let us say, 30 labourers and 15 units of machine. Here 70 labourers have replaced 70 labourers. This kind of rationalization has the advantage of reducing the hardship and drudgery of work. Machines can do the work of lifting, pushing, and pulling which had formerly to be done by human labour. Moreover, a greater use of machinery makes precise work possible. Mechanisation on a large scale has undoubtedly resulted in improving the shape and beauty of manufactured goods. Finally, in a country where human labour is either not available or is too costly mechanisation reduces the costs of production. These are indeed very great advantages. But this kind of rationalisation is also open to some serious defects. It creates unemployment. In an expanding economy or during war-periods when conditions of full employ-

ment are approached this does not matter. The labourers replaced from one place can be employed in some other place. But under normal conditions when this is not possible it causes great hardship to labourers. The human cost of rationalization, therefore, is unduly heavy. It is not possible to rationalize Indian agriculture as rapidly as is necessary because we have no alternative avenues of employment for the displaced workers. The trade union leaders are opposed to it because of the hardship it causes to labour. There has been a considerable mechanisation in India's cotton mill industry between 1927 and 1940 but in most cases it was opposed by labour. An effort to induce a weaver to mind a larger number of looms led to a serious labour strike in Bombay. Rationalization increases the wage rate by increasing the marginal productivity of labour and, to that extent, it is welcome. But it generally reduces the share of the national income going to the labour as a class. In the above example, when the number of labourers to produce 200 units of a commodity is reduced from 100 to 30 it is quite likely that the wage per labourer might rise from Rs. 15/- to Rs. 45/- per month. But in spite of the higher wage rate the total wages accruing to labour would decline from Rs. 1,500 to Rs. 1,350. Rationalization thus often makes the mal-distribution of wealth still worse. It makes the rich richer and the poor poorer and, unless it is combined with measures to increase the share of labour in the national dividend, it might bring economic chaos and disorder which some political thinkers have always been expecting.

This type of rationalization, in the sense of replacement of labour by machinery took place in a number of Indian industries especially in cotton textile, iron and steel, and leather industries during the inter-war years. The process has continued since, though its tempo was reduced during the war period due to the non-availability of adequate supplies of machinery.

Cut-throat competition

In the capitalist system the magnitude of supply is determined by private entrepreneurs. Each producer tries to calculate the total market demand, which in itself is a difficult

task, and then tries to gauge the share of this demand that he would be able to sell. On the whole he tends to take a rosy picture of his prospects and creates excess capacity. Even if there is some doubt about his share of the market demand each producer feels hopeful that by the device of cut-throat competition he would be able to eliminate the rivals—a task that is not so easy as it appears. The result is over-production. The same situation might be created if the market demand declines due to a fall in the number of consumers or in their income. Over-production would again result leading to falling prices and losses for the producers. Rationalization of the second type is a defensive device to protect the interests of the mill-owners and manufacturers.

It usually takes one of the following three forms: (1) The entry of new firms in the industry is controlled by license so that too many new firms entering the field might not cause over-production. A central organisation is created and the government gives it statutory sanction to control the entry of new firms. The British iron and steel industry and the Indian sugar industry have made extensive use of this method. This method has two dangers. If it is not done impartially it may do more harm than good. Not only may the object of control be defeated but the situation may be made worse by the inefficient firms expanding their capacity. This is actually what happened as a result of the defective policy followed by the Indian Sugar Syndicate. If the entry of new firms is restricted it might lead to stagnation. The infusion of new blood makes for efficiency and if this is prevented harm may be done.

(2) The output of the existing factories may be restricted. This can be done in three ways. (a) Some factories may be closed altogether or (b) some portion of each factory may be closed or (c) the full equipment may be worked a fewer number of hours. As to which method is selected depends upon a number of considerations. In the case of cotton and jute textile mills it is possible to close down part of the equipment but the nature of the machinery and the type of work makes it impossible in the case of iron and steel and cement industries to do so. Working in each factory partially increases the costs of production because such an arrangement disturbs the

balance and does not permit optimum production. In such a case it is better to close down some factories altogether, but such a course is not possible when the inefficient firms which should be closed down are financially strong. Such was actually the case with India's cotton mill industry. In some industries, such as glass manufacturing, the furnace has to be kept constantly heated so that working 40 hours a week is not a practical proposition. In the selection of the most suitable method the attitude of labourers has also to be taken into account.

(3) The output may be reduced to the level of market demands, or less, by the method of unification in the shape of a merger or amalgamation. The combine can close down some plants or shift them to other places. This actually happened in the case of India's cement industry and the Indian railways. The excessive development of the Indian cement industry gave rise to conditions of cut-throat competition. Efforts at loose forms of organisation did not succeed. Hence a merger was formed in 1936 which completed its work by 1937. "A new company called the Associated Cement Company of India Ltd. was floated with a capital of Rs. 8 crores. Ten existing companies joined the merger. The shareholders of these existing ten companies were offered cash or shares in the new company in exchange for their old shares. Full control in this way passed into the hands of the A. C. C. (Associated Cement Company of India Ltd.). The quota system was given up and territorial markets were allotted to different factories. Moreover, factories situated in the centres of the consuming area were enlarged with additional machinery; factories in excess of the local demand were closed down. In this way much wastage was avoided and conditions in the industry were stabilised". (Indian Finance Year Book).

Scientific Management

This deals with the internal technical organisation of a factory. It means the selection of the most suitable man for each job, and the study of the shortest time it takes and the number of persons it requires to finish a particular job. It further implies the proper classification of different jobs in the factory so that the work may be organised in the most efficient

fashion. All this needs a very close study on the part of experts. The labourers are taught to conform to the new requirements and they are given financial inducement of higher wages. If these efforts are successful the costs of production are reduced. This is a desirable aspect of the problem. But these methods frequently lead to the imposition of an unbearable burden on the labourers. And when that happens the human cost of such schemes of scientific management becomes too excessive. Moreover, it has frequently happened that the greed of producers has induced them to demand more and more intensive work from labourers once they begin to work harder under such a scheme. If labourers agree to this their health might suffer. Such schemes, under certain conditions, lead to a weakening of the trade union organisation. It is for these reasons that the trade unions frequently oppose such schemes. But these evil consequences follow only when the thing is overdone. If it is kept within limits the advantages of scientific management would outweigh its disadvantages.

CHAPTER XXI

INDUSTRIAL ORGANISATION

The entrepreneur exists in all forms of industrial organisation—individual ownership and management, partnership, and joint-stock companies—but he has a greater significance for the joint-stock form of industrial organisation. In this form ownership and control are separated and though the entrepreneur does not own it, he controls and manages the company. The fortunes of the joint-stock company, therefore, intimately depend upon the efficiency and capacity of the entrepreneur*. The entrepreneur takes risks in industry. He decides what goods are to be produced and what raw materials and factors of production have to be used to this end. The work of the entrepreneur consists in taking original decisions and issuing orders. All the others obey these orders. The manager, the chemist, the engineer and the labourer have to be clearly distinguished from the entrepreneur. All these others carry out orders. Their work also involves mental effort but it is of a routine type. The most important point is that either one man may perform the entrepreneurial function or it may be divided up between a number of persons. If a manager or chemist is given the power to take independent decisions, distinct from the general policy of the company, to that extent he performs the entrepreneurial function. In modern industry with its complicated organisation it is difficult to identify one man as entrepreneur. His function is really subdivided and a number of persons simultaneously perform it.

Functions of entrepreneur

The entrepreneur performs two major functions of co-ordination and risk-taking. The work of co-ordination is probably easier and for this the entrepreneur gets "normal" profits which are in the nature of wages and are determined

*Here the word entrepreneur is used in the sense of the highest type of organiser whose principal work is to take independent decisions. For the more specialised sense in which the term is used in the modern theory of distribution see the chapter on Profit.

on much the same principle as wages of labour or any other factor. The work of co-ordination covers the following functions :

(a) decision about the type of goods to be produced and the proportion in which the different factors have to be combined to achieve the desired result,

(b) the choice of right man and right raw material for each job,

(c) the policy of the company in relation to the competitors; on this depends the success or failure of the industry vis-a-vis the rivals,

(d) decision about the advertisement policy of the company,

(e) decision about the relations which have to be maintained with the government and the public,

(f) decision about the policy to be followed in departmental adjustment and co-ordination.

The other function of "risk-taking" calls for greater capacity and is far more difficult. The payment for it is 'pure' profits and the entrepreneur earns it without reference to the principle of marginal productivity and purely as a chance income. A really successful man in business is he who can take correct decisions in this field. The entrepreneur has to decide the future market demand, the share of it which he can hope to supply, the price at which he can buy his raw materials etc., and the price at which he can sell his goods. A correct decision about the right time of buying and selling, the right time for raising finance and the kind of finance which should be raised determines the success or failure of an entrepreneur. The entrepreneur pays labour and buys raw materials etc., but has to wait for the price of his commodity. If he is correct in his decisions he makes profits otherwise he incurs losses.

It has wrongly been asserted that the entrepreneur does

not exist in the case of state enterprise or in a socialist state. The entrepreneur is equally necessary for these forms of enterprise. But now his form changes. In capitalist enterprise the entrepreneur is a private person who is actuated by the profit motive. He works hard because with greater effort he makes more profits. He cannot afford to slacken his work except at the cost of his profits. The entrepreneur is the central pillar on which the capitalist edifice rests. But in the case of state enterprise or a socialist state he is a (1) government official and (2) receives a salary like any one else. This becomes necessary because the socialist system does not recognise private profits and the gains of individuals cannot be made to rest on chance earnings. But the functions of co-ordination and risk-taking^{*} exist in the socialist system as much as in the case of capitalist enterprise. Some one has to decide the amount of the commodity to be produced, the type and amount of factors to be used, and the methods of production to be employed. In a capitalist system the entrepreneur has to adjust himself to the free working of the forces of supply and demand while under full-fledged socialism there is authoritarian procurement of raw materials, labour etc., and authoritarian disposal of the finished commodity. But the function of the entrepreneur is there all the same. It frequently takes the shape of coordination of work between different departments and ensuring the regular passage of semi-manufactured goods from one department to another. There is the risk of work but the losses and profits are now borne by the State instead of the individual. But the function and the payment for it remain as in the capitalist system though their form and system inevitably change.

Joint Stock Enterprise—There are two chief differences between individual ownership and partnerships on the one hand and joint-stock enterprise on the other. (1) There is unlimited liability in individual ownership i.e. if a loss is incurred the liability of the proprietors of the business is unlimited. In other words if the losses exceed the assets of the business the partners will have to make good the

*Here risks are ultimately taken by the State, the citizens have to shoulder the responsibility of losses when they occur.

losses, in case of liquidation to their full extent so far as the creditors and clients of the business are concerned. In doing so, if necessary, the entire private property of the partners might need to be sold. But in the case of joint-stock enterprise the liability of each share-holder is limited to the extent of his share. If a man purchases a share of Rs. 100 in a cement company and the company comes to grief, he would not be called upon to pay more than Rs. 100. Suppose he has already paid Rs. 25 to the company on his share and the company comes to grief the liquidators cannot ask him to pay more than Rs. 75 i. e. the balance due from him on his share, no matter how much loss the company may suffer. The principles of limited liability become necessary because in industry responsibility is separated from control and the shareholders can not be expected to hold themselves responsible for the loss to an unlimited extent. In the case of individual ownership or partnership it is the duty of partners to see to the soundness of their business and if they cannot safeguard it they must bear the loss. In the absence of the principle of limited liability joint-stock companies would have been unable to raise the necessary capital.

(2) The share capital of private partnership need not be divided into definite shares while that of the joint-stock company must necessarily be so divided for two reasons. The joint-stock company to be able to raise capital has to cater for people with different tastes and requirements. Some are prepared to take a greater risk for a greater return while others prefer safe investment and are satisfied with a lower yield. Moreover, it is necessary to maintain free transferability of shares and debentures in order to induce people on a wide scale to subscribe to industrial capital. For this purpose it is necessary to divide the capital into shares and debentures. Debentures are in the nature of a loan and on these the rate of interest is guaranteed, whether the company makes a profit or not. In case of liquidation the claim of debenture holders is considered along with the creditors. The shares can be deferred, ordinary, first preference, second preference, and cumulative preference shares. In the case of preference shares the profit is first utilised to pay the fixed rates before distributing it to others. But if in any one year there is no profit the preference share holders get nothing. But in the case of

cumulative preference shares the claim is continued and whenever the company makes profit the fixed amount will be paid on these shares for *all* the years in default before paying anyone else. The deferred shares get dividend after the claims of all have been satisfied and in case of liquidation they are considered last of all. In the case of deferred shares, therefore, the risk is the greatest, as also the chances of earning high dividends.. On the other hand in the case of cumulative preference share the risk is low and so also the yield.

Comparison

The great advantage of joint-stock form of company organisation is that because of limited liability and the co-operation of a large number of people huge capital can be raised. This makes it possible to launch big schemes. In the case of private ownership and private partnership the extent of capital is necessarily limited. Such enterprises can only deal with small-scale and relatively safer industries. In the case of joint-stock companies because of huge capital research is made possible. Production can take place at low costs because of more efficient organisation but private partnership, even in other countries, finds it impossible to spend the requisite amount of money on these things and consequently suffers in efficiency.

The joint-stock company has an important place in the formation of capital and the growth of savings. People are encouraged to save because the joint-stock company gives them the necessary facility for investment. Not all can start their own business and in the absence of joint stock enterprise they would be prevented from taking any part in the financing of industries. But as against this, the advantage of individual ownership and private partnerships is that they provide work to amateur businessmen who have talents but are otherwise unfit to work in a company.

The joint-stock company has a continuity of life while private partnerships frequently end with the life of a partner.

In the case of a joint-stock company if one dies his place is quickly and automatically taken by another. Continuity

of life is essential for efficient working and the building up of a goodwill.

In the case of joint-stock enterprise there is great possibility of fraud and recklessness as ownership and control are separated while in the case of private partnership the scope for such practices is limited as the work is under the supervision of those who own it. This difficulty in the case of joint-stock enterprise can however be removed to a certain extent by making suitable provisions in the company law. In the case of individual enterprise there is some sort of a personal touch between labour and employer on the one hand and between consumer and producer on the other. This touch becomes less in the case of private partnerships while it almost disappears in the case of the joint-stock enterprise.

In certain cases individual enterprise and private partnership are more effective in meeting competition because the rivals cannot discover the true state of affairs. In the case of joint-stock enterprise the rivals can easily discover much and this makes competition keener and deadlier.

All these different types of organisation are good in their own place. Every industrial system must necessarily have all of them. Even in highly industrialised countries like Great Britain, the U. S. A., and Sweden all these forms thrive side by side. As a matter of fact quite a large number of new enterprises start as private partnerships or as one-man affair and are converted into a public company only subsequently. In this way individual form of organisation is necessary not only for its own sake but as a stepping-stone to joint-stock enterprise.

Combinations

The working of perfect competition is not always profitable to the producers. It gives rise to cut-throat competition, over-production, and falling prices. To overcome these the producers combine among themselves. The chief object of this combination, which might take various shapes, is to protect the interests of the producers. It forms part

of schemes of rationalization which the producers adopt to safeguard themselves. These combinations can be of various types and the best classification is available in the Balfour Committee report on British industry entitled "Factors in Industrial and Commercial Efficiency". The following definitions have been reproduced from that report. The different types of combination are classified according to their intensity and extensiveness. Those which are of a loose kind come first and those which are more closely knit at the end.

1. "Informal undertakings or *gentlemen's agreements* between competing producers or merchants as to prices to be charged or areas to be served." There are very loose type of combinations and are in many cases only temporary. They are, therefore, easy to form and easy to operate. They are frequently made by local tradesmen such as bakers, barbers, and milkmen. Industry has also made use of them. The earlier agreements in the Indian cement and jute industries were of this kind. These agreements depend for their success on the mutual interest of producers who do not want to give up their freedom and yet wish to avoid undercutting each other. No one undercuts the prices because it is in no one's interest to do so.

2. "*Associations for regulating prices*—These involve a more formal agreement between competing producers or merchants, who form an association to fix minimum prices at which they will sell." The object of these associations is also limited and while leaving full freedom to the producers they only fix prices in an effort to prevent undercutting.

3. "*Associations for regulating output*—The simpler form of organisation is for an association of competing producers to arrange during a period of depression that only a proportion of the plant of each firm shall be worked, in order that production may be controlled and prices increased or maintained. In other cases the actual output of each producer may be fixed, and he is expected (whether subject to fine or not) not to exceed it". The Indian Jute Mills' Association has performed this function for a long time and frequently a part of the machinery is closed down by agreement in

each member mill so that production might not exceed demand. Such an agreement is valuable in an industry suffering from excess capacity. In the absence of such an agreement production is likely to exceed demand and thus pull down the prices. For the success of this form of organisation it is necessary that non-members or new firms do not break it. In the case of the Indian jute mill industry it was not possible to work it satisfactorily because non-members did not observe the principle and continued to expand their productive capacity with the consequence that those who did observe it suffered by losing their markets.

4. "*Pooling association*—A common type of pooling association is that in which each member pays a similar fixed sum per unit of output into a pool, which, at regular intervals, is divided up equally among the contributors after the formation of a reserve fund. Under a more elaborate form of arrangement each producer is allotted a percentage of the aggregate output of all the producers in the association, the percentage being fixed on the basis of ascertained experience in the recent past. If a producer exceeds his percentage of the total output, he pays into the pool a sum proportionate to the excess, calculated on an agreed basis; if a producer falls short of his percentage he receives from the pool a sum, calculated also on an agreed basis (though not necessarily the same basis as is applicable to excess production), proportionate to the deficiency. In some cases pooling associations also fix prices". There have been some such associations in India but the best example is provided by the working of the "Industrial Pool" by the Indian Jute Mills' Association which remained in operation between 1st July 1914 and 31st March 1946. This arrangement made it possible to spread the financial strain of war-time conditions on all mills as uniformly as was possible. In its absence some mills would have made good profits while others would have been ruined.

5. "The participating *Cartel* with selling syndicate. This form of organisation was adopted in Germany in a number of industries. The essence is that competing producers agree to establish for a definite period a joint selling agency for the exclusive sale of their products, and that each producer is

allotted a participation in the total output. Those who exceed their participation pay a fine those who fall short of it receive an indemnity. The selling agency or syndicate is registered as a company in which the individual producers are shareholders with votes in proportion to their output. The members fix a base price for products covering cost of production and sell to the syndicate at an accounting price that is usually somewhat higher. The syndicate sells to the public at the highest price it can get, adjusting its price to circumstances in different parts of the market, though it does not as a rule sell below the accounting price. A feature of some of the German Cartels notably the *Stahlwerksverband*, before the war (of 1914-18) was the subsidizing of the export trade, especially in years of depression." In India there has not been a pure cartel in this sense but a number of associations have from time to time performed some of these functions. The great advantage of this form of organisation is that it is neither as loose as the 'gentlemen's agreement' nor as thorough as the Merger and therefore serves a useful purpose under certain circumstances.

6. "The 'voting' trust. This form of organisation became prevalent at one period in the United States, until it was held by the courts to be illegal. A number of competing companies agreed to assign the whole of their stock to a group of trustees, receiving in exchange trust certificates representing the valuation of their properties. The trustees were thus able to exercise complete control over all the businesses. This is in theory a permanent form of organisation." In India we do not have any such organisation. It was discovered to overcome certain legal restrictions which existed in America and in India its need has not arisen.

7. "*Holding Companies*.—Another method of establishing unity is for each of a group of companies to sell its shares, or a majority of them, to another company, established for the purpose or already existing, the shareholders of the individual companies receiving in exchange shares in the holding company, in the interests of the whole group of undertakings."

8. "Consolidations or *mergers*. These denote the con-

solidation or merging of two or more businesses into a single undertaking. The businesses taken over completely lose their separate existence." This is a complete form of organisation and has the advantages which other forms lack. Its only disadvantage, from the point of view of amalgamating firms, is that they lose their separate identity. But the resulting combine has great ease and facility in closing down redundant plants and in expanding efficient ones. It almost always leads to greater efficiency of production. There are numerous examples of this in India. The Associated Cement Company of India Ltd. was formed by the merger of 10 companies in 1936. The East Indian Railway system absorbed the O. R. Railway. In 1940 the Punjab National Bank absorbed the Bhagwan Das Bank. There have been many other examples of this kind in all the fields.

Vertical and Horizontal Types

All these combinations can, in general, be divided into two broad categories—vertical and horizontal. In the vertical form producers supplying different commodities in the same line combine together. If the producers of iron ore, coal, steel, engineering products combine together it would be a vertical combination. Similarly, sugar factories may on the one side control the cultivation of cane and on the other the confectionary industry. In India the institution of Managing Agency system has obviated the need of forming vertical combinations because the managing agents sometimes perform precisely the same function as a vertical combination would do. The managing agency cannot be called a vertical combination. But it sometimes performs the same function as a vertical combination. In the case of horizontal combination producers of the same commodity combine together. If producers of sugar combine or if producers of steel combine it would be a horizontal combination. Gentlemen's agreements, pools, cartels, trusts etc., are mostly formed between producers of the same commodity and are, therefore, horizontal in nature.

The inducement to form vertical combinations comes from the following considerations: (a) The element of uncertainty. The supply of coal is vital but if it is uncertain the iron

and steel producers better control the coal supply. Sugar factories cultivate their own cane to ensure regular and adequate supplies. (b) Consideration of freshness and quality. Ghee manufacturers instead of buying milk have their own dairy. Fresh fruit industry sometimes has its own orchard. (c) Technical reasons. In the case of engineering industry it reduces costs of production if hot iron directly passes to the engineering plant thus ensuring continuous process. Similarly, pig iron is converted into steel when hot. These technical reasons make it economical to form vertical combinations between the producers of these commodities.

The causes of horizontal combinations are (a) the existence of cut-throat competition between rival producers, (b) the existence of excess capacity and consequent over-production leading to falling prices such as actually happened in the case of India's jute and sugar industries, (c) technical considerations. As in the case of Imperial Chemical Industries Ltd. such combination made it possible to economise in the costs of production by centralised buying and selling. The combine can spend considerable amount of money on research which would not be possible for any individual concern to do. This has been true of the Associated Cement Company of India Ltd.

Managing Agency System

This system is peculiar to the soil of India and originated because of the special problems which were created in the days of the East India Company when either one of the managing partners of a foreign firm in India died or, for one reason or another, he wished to return back to his native land. The work was frequently entrusted by these foreigners to "agents" which in due course of time expanded their activities. This gave birth to the Managing Agency System. In more recent years, firms of managing agents have come into existence not to take over work from the outgoing management but also to start and set up new industries. The firms of managing agents undertake to manage anybody's firm for a consideration. In the beginning these managing agency firms were foreign but now there are quite a large number of Indian firms, such as Birla Brothers Ltd. and Tata Sons

Ltd., and the experience gained by them has been of immense advantage in the industrialisation of the country. The managing agencies are usually either partnerships or private limited companies.

Functions

"Broadly speaking, managing agents in India perform three important functions. First, they pioneer new industries, and play the role of promoters : they discover an industrial proposition, assemble the elements of the business, and finally procure the funds to put those elements into operation. Secondly, they provide finance required for industries in respect of both fixed and working capital. Finally, they perform the day-to-day management of industries—a work that is performed in other countries by a manager or a managing director" (N. Das).

In addition to being pioneers of industry, promoters of companies, and underwriters of the shares, and managers, the chief importance of the managing agents lies in their providing finance for industry. "The attribute of the managing agent that has most attracted public attention is his role as a capitalist, the supplier of industrial finance. Sir Victor Sassoon described the arrangement of finance for the companies under his control as the most valuable function of the managing agents. The provision of finance not only for initial fixed capital expenditure but also for subsequent re-organisation, extension and modernisation as well as for working capital purposes has to be arranged for by managing agents. They furnish this finance in various ways : by themselves subscribing to the share capital and debentures of joint stock companies or getting them subscribed by their friends and relatives, by arranging loans from banks and pledging their guarantee for the loans ; by attracting deposits from the public on the strength of their reputation and standing in the business world and last but not least by making advances to their companies from their own private resources at a certain agreed rate of interest." (S. K. Basu).

The managing agents charge a commission for their services. Before 1936 they could charge commission either (1)

on the basis of profits or (2) on the basis of net sales or (3) on the basis of quantity produced. The last two are not desirable because commission can be charged on the basis of sales or production even when losses are made so that there is always a tendency to overproduce. The companies Act of 1936, therefore, permits commission to be charged only on the basis of profits. In addition to commission, the managing agents make a lot of other profits with the help of their rights and privileges.

Two types

The Managing Agency System operates in all centres in India but two chief types have to be distinguished—Bombay type and Calcutta type. Some towns have managing agents of only one type and some have of both types. There are no hard and fast differences between the two but broadly speaking they differ in the following respect. (a) In Bombay the managing agency firms are mostly Indian while in Calcutta they are mostly European. (b) In Bombay the managing agency firms are interested only in one industry and that happens to be the cotton textile industry although there are also firms like the Tatas which control a number of industries, such as chemicals, oils, cotton textile, hydro-electric, iron and steel. In Calcutta the managing agents do not generally confine themselves to one enterprise only. Very often many factories in the jute, electricity, cement, and paper may be under the same managing agents. (c) In Bombay the firms are mostly hereditary. The son succeeds the father not only as a head of the family but also as head of the managing agency. The managing agency firms are mostly single family affairs. This factor of inheritance makes many of the firms inefficient, since there is no reason that the son of a competent person should also be efficient. In the Calcutta type there is no hereditary element. There are many partners in each firm and frequently the efficient employees are taken as partners. This infuses fresh blood into the organisation and keeps it healthy. (d) In Bombay type the managing agents retain the shares of companies under their control with the consequence that the investment of Bombay managing agents in companies under their control is substantial. The Calcutta managing agents, partly because they control a number of

industries simultaneously and partly because of tradition, do not stick to their shares unduly. They unload their old holdings and interest themselves in new enterprises. (e) In Bombay the managing agents usually spend their profits while in Calcutta they plough them back into business thus making it stronger. These are some of the major differences. They are not quite so clear cut as might appear from the above statements and recently many of these features have been undergoing a change. But in general it is possible to distinguish these features in the two types.

Advantages

The system has many advantages. The managing agents have much experience and are able to judge the earning capacity and prospects of an industry correctly. If an efficient managing agency firm manages a concern the chances of its success are quite fair. Secondly, the managing agents are very helpful in finding all kinds of finance for the firms under their control. This gives these firms a stability which is highly desirable. The managing agents also enjoy the advantages of large scale buying and selling. They purchase raw materials, chemicals, etc., for the concerns under their control, and this makes it possible for the latter to have them at cheaper rates. Finally, without being a merger or amalgamation the managing agency firms give all the advantages of a closer organisation to firms under their control. If the same managing agents control shipping, coal supplies, and manufacturing concerns the advantage of each becomes mutual. The risk element is reduced and supplies are assured.

Criticisms

The managing agency system is open to some serious criticisms. It has been abused by unscrupulous persons, although recent changes in the company law safeguard the public interest.

(a) Because the managing agency firms are assured their commission and because their position is safe they tend to

become inefficient and do not pay proper attention to companies under their control. But this tendency is partially counteracted by the loss of reputation in case of failure. The older and well established firms of managing agents are quite careful about their reputation and goodwill. Moreover, in the new Companies Act of 1936 companies and their subsidiaries are prohibited from appointing managing agents to hold office for more than 20 years at a time. Only a general meeting of the shareholders can renew the contract. As we have already seen the commission is calculated not on the basis of production or sales but of net profits and it is equally in the managing agent's interest that the company should make high profits.

(b) The managing agents invest the funds of one company in another under their control. This inter-investment of company funds is dangerous. Inter-investment of company funds might take many shapes. The spare funds of one company might be lent to another company under their control. The reserves of one concern may be utilised to purchase the shares and debentures of other and newer mills thus subjecting such reserves to undue risk. Funds borrowed from the banks and other agencies on the credit of one firm may be used in another firm.

This is a highly dangerous practice. The Companies Act 1936 makes some effort to prevent inter-investment of company funds. It provides that no company shall make to a managing agent of the company or to any partner any loans out of the company's money. Certain conditions are provided for the purchase of shares etc. of one firm by another under the same managing agents.

(c) If the managing agents take too many firms under their control the organisation is likely to become top-heavy and inefficient.

CHAPTER XXII

THEORY OF LOCATION AND LOCALIZATION OF INDUSTRY

In organising production one of the important things that has to be decided is the exact place where the factory should be located. If the factory is located at the right place then the costs of production, in so far as they depend on location, will be the lowest. But if a mistake is made in its location the costs of production will be higher. In this connection the oldest and even today the most acceptable theory is that of Alfred Weber. He considers the factors which determine the location of factories in terms of ton-miles and transport costs. We take the weight of the raw materials to be carried from their places of availability to the factory and the weight of the finished product to be carried from the factory to the market. According to a simplified version of Weber's theory raw materials can be of two types: (1) those that are available everywhere such as clay, water etc. so that they do not have much influence on location and, (2) those that are available in particular regions such as iron ore, bauxite deposits, coal, sugar-cane, etc. The latter naturally exert a much greater influence on the location of an industry. A further classification is made of these localised materials. If such materials contribute their total weight or at least most of their weight, to the final product as is the case with raw cotton in the production of cloth or limestone and sand in that of cement they are called 'Pure Materials'. These do not exert much influence on the location of industry because it is quite immaterial, from the point of view of the weight to be transported, whether these raw materials are taken to a distant place which is near the markets and there converted into finished goods or the factory is located near the source of raw material supplies and the finished product is taken over a longer distance to the market. The two locations may mean some difference in costs of transportation but not a material difference. The other kind of localised materials are weight-losing materials such as bamboo in the case of paper industry and sugar-cane in the case of sugar industry. These weight-losing materials exert a great

fluence on the location of a factory because in the course of their conversion into finished products much weight is lost and to that extent it is economical to locate the factory near the source of raw material supply.

In a simplified picture, we have to consider ton-miles covered by the amount of weight-losing localised raw materials used and the weight of the finished commodity to be transported to the market in deciding the location of a factory. In the case of weight-losing raw material it is more economical to locate the factory near the source of raw material supply while in the case of others it may be more economical to locate the factory near the markets. Which of these courses would be more economical can be found by dividing the weight of the localised materials by the weight of the finished commodity. This gives us the "material index" of the commodity. If the material index is high, the industry is inevitably attracted towards the raw material centres. It is for this reason that the sugar Industry in India is concentrated mostly in the Uttar Pradesh and Bihar. The material index of this industry is high and therefore it shows a tendency to be concentrated near the supply of raw material. If on the other hand the material index is low the source of raw material supplies will not offer any particular attraction and, for various reasons, the industry will show a tendency to be located near the markets. The cotton textile industry exists in places like Great Britain and Japan which do not have local supplies of raw material.

If we consider only the raw materials and the markets the industry will be located at a place where the total transport cost of taking the raw material to the factory and the finished commodity to the market is the minimum. But we have also to consider other factors like the availability of labour, capital, and other facilities which an industry needs. In a simplified picture which only takes account of the raw material supply and the markets we assume that labour, capital, etc., are equally available everywhere. But if that is not so and in some places labour and capital are not available these centres would not be selected by an industry unless the advantage of cheap transport of raw materials and finished commodities more than compensates for the disadvantage of bringing labour, capital, etc. from a distant

place. If there are two spots *A* and *B* which are equally good from the point of view of transport costs but labour and capital are available at *A* and not at *B*, the location *A* will be selected in preference to *B*. If the costs of transport are lower at *B* than at *A* and the availability of labour and capital gives *A* an advantage which more than compensates for the difference in costs of transportation the industry will still be located at *A*. It is only when the advantage of *B* from the point of view of transport costs is so great that average cost per unit of manufacturing the commodity at *B* is lower than at *A*, in spite of the disadvantage of labour and capital supply, that the industry will be attracted to location *B*.

It is to be appreciated that there may be a number of alternative locations for an industry, all equally good so far as transport costs are concerned. The choice between these alternative locations will depend on the availability of labour and capital and certain advantages which the existence of other factories in these places might give. From the purely economic point of view the entrepreneur will select that particular location for his factory where the average cost per unit of output is the lowest. This cost covers not only the transport cost for carrying the raw material per unit of output but also the cost for securing labour, capital and other materials.

In actual practice the location of factories is not always determined on the basis of purely monetary considerations. The theory assumes that the entrepreneur has knowledge of all the alternative sources of raw material supplies, the amount of raw materials required per unit of output, and the distance which the finished commodity will have to cover from the factory to each separate market. In addition to this the entrepreneur should know the different freight rates to be paid on different kinds of consignments. It is only when all this and much more statistical information of this kind is available that it is possible to calculate the different co-efficients in order to determine the best location for an industry. In actual practice the entrepreneur does not always get this information. He frequently proceeds on the basis of partial information. In the case of existing

industries he is frequently attracted to places where it has already been located. This lack of knowledge and careful study on the part of entrepreneur leads to faulty industrial locations. It also leads to overcrowding of some industrial centres in the country and neglect of other places which might have been industrialised, if the entrepreneurs had been more careful. Secondly, the entrepreneur is not always guided by reason. He might prefer a more costly location on purely sentimental grounds. The entrepreneur and his wife and children, as has been the case in India, prefer to live in a city rather than in a rural area due to the advantages of social life, cinema pictures and other amenities which the city gives. If a rural location is more economical from the point of view of costs of production it might be sacrificed because of these considerations and the factory may be located at a wrong place. The shift in the population in India from rural centres to the cities is partly explained by this attachment of entrepreneurs to city life.

Further the location of industry may be at points other than the technically optimum because of defective taxation policy of local authorities. If the taxes on factory buildings, production, and incomes are higher in one locality than in another the factories will inevitably be attracted to points of lower taxation. This happened in Great Britain where low taxation in some countries attracted industries while high taxation in others scared them away. In India, before the accession of the princely states to the Union, the taxation on incomes, factory buildings, etc., was lower in the princely states than in what was then called 'British India'. This attracted factories to the princely states. In some cases, Mysore for example, the state happened to be an alternative optimum locations for the particular industry and it was as economical to locate the factory there as elsewhere. In such a case it did no harm if the factory was located there. But in other cases factories were taken to the princely states although the place was not suitable from the consideration of ton-mile transport costs. In most of these cases the availability of cheap labour in these areas, because of the absence of suitable labour laws and disorganisation of labour, and easier capital supply because of the court patronage, and the grant of land by the Durbar attracted industry.

In India another very peculiar cause has tended to divert industry from the technical optimum locations. There has been a craze for provincial self-sufficiency. The sugar industry made a start in Uttar Pradesh and Bihar. As time passed Madras, Mysore, Bengal and the Punjab set up sugar factories purely on grounds of provincialism. In the case of Madras and Mysore this was all right as they happened to be alternative optimum locations and the shift of sugar factories to these areas was justified. But such a justification did not exist in the case of Bengal and Punjab and the starting of sugar factories there has resulted in defective location. The cotton textile industry is located in Bombay province, U. P., Madras, and Madhya Pradesh. A number of cotton textile mills have recently been set up in Bengal so that Bengal might not have to depend on other provinces for cloth supply and the Bengali youth might get employment. At one time there was a desire on the part of Uttar Pradesh to have more jute mills. The disadvantage of provincialism in this field is two-fold. It leads to unnecessarily high costs of production due to defective location of industry. It causes over-production of commodities. In the inter-war period, between 1918 and 1939, an actual over-production of some commodities was threatened in India due partly to this craze for provincial self-sufficiency. It is easier to indulge in this costly vice of provincialism in an expanding economy when there is a rising demand for goods. But when demand is either constant or falling the setting-up of new factories can only result in the failure of some and uneconomic working of others.

The technical optimum locations have sometimes to be sacrificed due to air-raid precautions and the fear of destruction during a war. If the best locations are on the coast line, in border towns, on river banks or in open cities they have to be sacrificed so that the production might not be dislocated in the case of a war. In some cases equally good alternative locations might be available in the interior of the country safe from enemy attacks but if they are not the industry has to be shifted to less desirable locations. This increases the costs of production.

Localization

We have seen above how the location of an industry is

determined. Sometimes in selecting the site for a productive plant purely monetary factors are taken into account. Sometimes, however, (perhaps more often than not) other considerations such as those mentioned above also exercise their influence in the determination of location. Whatever be the factors that go to determine the site, they always tend to bring about the massing of factories, all producing the same commodities, in one particular region. Where all the organisers take the same factors into consideration the concentration of factories becomes heavier. Technically, such a concentration is known as localization of industry. We shall mention here some of the more common factors that are responsible for bringing about localization of industries. If any particular raw material or the type of skill wanted for the industry is available in one place many different units are set up there to take advantage of the available supply. If the place is connected by rail or road with the sources of raw material supply and markets the industry tends to concentrate there. In the early days the cotton textile industry was localized in Bombay city and island because of the facilities for exporting the output of the industry. The cotton textile industry was localized in Lancashire in Great Britain for much the same reason. Another cause of localization can be the patronage of a state to any particular industry or the whim of an industrialist. Once the industry comes into existence at any particular place, whether there was initially a justification for it or not, certain external economies become available which attract other industries. These advantages might take the shape of supply of subsidiary goods or the training of labourers or the increased transport facilities made available to the industry because of some units already existing there. Alfred Weber has divided the causes which lead to such concentration of industry or the reverse process of movement away from such centres of concentration into (1) agglomerating tendencies and (2) deglomerating tendencies. Agglomerating causes lead to the concentration of an industry in any particular place while deglomerating causes lead to the dispersal of an industry. The former are such things as the availability of labour, capital, etc., and other external economies in one place as against other possible places while the latter, which cause the movement in the opposite direction, are such things as high rents for land and

houses, high taxation and the diseconomies which arise from too much concentration of industry in any one particular place.

Advantages

Localization of industry no matter whether wisely or unwisely brought about may, in course of time, create some favourable circumstances for the industry.

(1) If the industry is localized in any one place, competition between the different producing units is very keen. This leads to alertness on their part and makes them more efficient. This also leads to greater scientific research and experimentation in order to do better than the rivals. It has been found that partly as a result of this competition the concentration of industry frequently leads to better industrial organisation. It is partly because of this that India's jute mill industry is organised better than the cotton mill industry. Under certain conditions localization might lead to the formation of closer organisations like the merger and amalgamation and might thereby lead to monopolisation.

(2) If industry is localized in any one place it might get better facilities than it otherwise would. The concentration of industry leads to better training of labour and other personnel, the growth of banking and other facilities available to the industry, and the provision of such facilities as railway sidings etc. which would not probably be available if there existed only one or two factories. The advantages of subsidiary industries become available to localized industries. As the glass bangle industry is concentrated in Ferozabad it is possible to give facilities of cheap and continuous power to all the producers.

(3) The products of localized industries might acquire a reputation associated with the name of that particular place. This helps in the popularity of the commodity. The brassware products of Moradabad are famous partly because of the concentration of industry there. But if the industry acquires a bad reputation its concentration in one place can also be a disadvantage.

Disadvantages

Localization has in certain cases a number of serious disadvantages both from the point of view of the industry and of the country in general. (1) The major disadvantage is that it might lead to the creation of what are called 'depressed' areas. If an industry is concentrated in any one place and there is a fall in demand, as might very well happen due to a trade depression or other causes, production may have to be curtailed or completely stopped. This will cause unemployment and widespread misery. The local authorities will lose a source of income and would probably not be able to maintain the amenities which they ordinarily provide. This actually happened in a number of places in Great Britain and other countries. When the Lancashire cotton textile industry was depressed due to a fall in demand from India and other markets the people there suffered much. If instead of being localized the industry is properly diversified i.e. factories belonging to any particular industry are spread out and are located at different optimum points instead of being concentrated in one place, the depression of any one industry cannot harm the area much. If one industry is depressed the others may not, and the people living in that area might get employment in other factories which might be there.

(2) If an industry is localized in any one place to the exclusion of others it may not be possible to make proper use of national resources available in other parts of the country. If the factories were spread out and located in as many parts of the country as possible it would be possible to make use of local natural and other resources which cannot be shifted. Localization leads to the waste of such resources.

(3) Localization creates housing congestion, ill-health, and traffic and sanitation difficulties. Up to a point as different factories belonging to a particular industry are located in one place the housing, sanitation and other facilities will suffice for all, but after a time this leads to over-crowding and congestion. In its turn it raises the cost of living of the labourers and the cost of housing, transport etc. The millowners have to pay higher wages to labour. This increases the costs of production. Such a thing has actually happened in the case of industries loca-

lized in Bombay, Calcutta, Kanpur and other big towns. Localization begins to harm the industry itself by raising the costs of production and thereby reducing its competitive power.

CONTROL OF INDUSTRIAL LOCATION

We have found that private entrepreneurs if left to themselves are not able to locate industries in the most economical spots. They do not know all the economic locations or are biased by sentimental considerations. In any case the private entrepreneurs have not shown much regard for the national interest as distinct from their own narrow interests. It is therefore necessary for the State to control location of industries. As Dr. Balkrishna has so ably pointed out in his book 'Regional Planning in India', "under the peculiar circumstances in India a state regulation of industrial location is the *sine qua non* of economic reconstruction. Regional planning, as envisaged for India, will depend for its success on the assumption by the State of the power to control the distribution of its industrial establishments. Unlike Western countries India has its entrepreneurial ability confined to certain areas, whereas its natural resources and labour force are widely scattered. This state of affairs is inimical to a balanced development of industry regionally though not functionally." The need of control over location in an industrially backward country like India is much greater than in the already developed countries of the West. Such a control is essential for securing rapid and orderly progress of industrialization.

The regulation and control of location can, however, only affect new factories. The state may not allow factories belonging to certain industries to be set up in certain places. Factories may be attracted to certain places by giving them various facilities. These are effective only in the case of new enterprise. In rare cases some existing factories may also be shifted but that becomes a very costly process and may not be worthwhile. But even if only new enterprise is controlled in due course of time as existing factories become old and wear out and have to be replaced by new units the State control of location will improve conditions.

The objective of State policy should be to prevent over-crowding in some areas and neglect of other areas, to ensure that in the case of a war the industrial fabric of the country is not crippled by enemy action, and to secure rapid industrial progress of the country. The State should follow a policy of proper diversification of industry so that all the parts of the country might be developed to the highest possible extent.

Methods of Control

There are various methods of control both direct and indirect which the State can adopt. They may take the shape of incentives and deterrents, the former would aim to attract industry to locations which are not considered economical and suitable by the private entrepreneurs and the latter would discourage industry from going to places which are already over-crowded and congested. One writer* has classified the different forms of incentives which the State might give as follows:

(a) *Psychological*, such as mass persuasion of industrialists to locate their plants in certain backward regions which offer vast possibilities of development.

(b) *Social*, such as the provision of improved amenities and social services like education, health and recreation in places to which it is desired to attract industry.

(c) *Financial*, such as the (i) grant of loans to private entrepreneurs at low rates of interest, (ii) grant of direct cash subsidies from the Treasury and (iii) rebates or exemption from certain taxes.

(d) *Administrative*, such as the readjustment of pay of officers so as to make services in backward areas relatively less unattractive in comparison to other more popular locations.

(e) *Developmental* such as (i) free grant of land for fac-

* Vide article on 'A National Policy of Industrial Location' in the April 1950 issue of the Indian Journal of Economics, pages 367-373.

tory premises and residential quarters, (ii) provision of transport and communication facilities, (iii) location of Government defence factories in such places so that necessary conditions might be created for attracting other industries, and (iv) development of public utility services, etc., in such places.

Location of industry can be controlled if the State makes it compulsory to take a licence before a factory is set up. This has been done in the case of some industries with success. At the time of issuing the licence the licensing authority will take all the factors into consideration. This will prevent factories going to places which are already congested. But merely the issuing of a licence will not attract factories to locations which are not popular with private entrepreneurs. In such cases the State will have to give positive help to these entrepreneurs to provide the necessary incentives. If this does not succeed the State should be prepared to set-up factories in these unpopular areas. This will have a healthy influence on private enterprise. If the unpopularity of these locations is due to backwardness and lack of available facilities the setting-up of factories by the State will remove the cause of trouble.

Licensing of factories cannot be considered in isolation. It should be a part of the general economic policy of the Government. The Government of India has constituted a National Planning Commission which will decide the various problems and priorities connected with industrial planning. Industrial location will be one of the matters which the Commission will consider and decide. The licensing of factories in order to control industrial locations will have to be fitted into a definite pattern of industrialization.

PART IV
Rural and Urban Problems

CHAPTER XXIII

PROBLEMS OF AGRICULTURE

In general, economic laws and theories apply as much to agricultural activity as to any other. Yet there are marked differences between the business of agriculture and that of industry. We cannot explain the economics of agriculture nor suggest improvements in it by making the same assumptions as we do in the case of industry.

AGRICULTURE AND INDUSTRY

On the production side, Nature plays a greater role in agriculture than it does in industry. Agricultural production is more dependent on the whims of nature. Weather, climate, seasons, ravages of insects, plant and animal diseases and other biological factors increase the vulnerability and the uncertainty of the ultimate output on the farm.

Compared to industrial operations, the agricultural ones are on a small scale. Thus India has mostly family and subsistence-farming. Even when prices do not cover the cost of production, many a submarginal producer continues to cultivate his farms. If such a producer were to abandon his farm, the farm would not remain abandoned. Other producers would take it up, unless the past inefficiency of production was due to the farm and not to the man. In a country of very low standard of living and bad nutrition, the more needy persons are apt to take up for cultivation even the inefficient farms.

Besides, the farmer looks upon agriculture as a way of life and not as a way of business. So, the labour employed on the farm is generally only that of the farmer and his family. The average farmer hardly employs more than one or two hired men. Hence, when prices fall, there is little change in his outlay on labour and assuming a certain standard of living the cost of living—and hence, the labour costs—remain practically unaltered. However, the economy of high wages is true also of agriculture. It is more evident where cultivation

is carried on with employed labour. Higher the wages, greater is likely to be the efficiency and lower the real costs.

As in industry, a shortage of labour leads to a greater use of machinery. The farmer is no doubt conservative, yet a continued shortage of labour induces him to consider more carefully the proposal to adopt a certain labour-saving device. Even otherwise, once the cultivators are convinced of the utility and the practicability of a new mechanical method, they readily and speedily adopt it. The substitution of machines for manual labour is limited by another factor, viz., the capacity of the farmer to invest, and the profit from the investment. Also in spite of much interesting progress made in the world, there is, comparatively speaking, very little scope for unrestricted mechanisation in agriculture. With greater mechanisation and investment of capital, a point is soon reached when the advantages are offset by the cost of maintaining the fertility.

Capital is not easily transferable in agriculture. The cultivator may well decide not to plough, or to plough only half of his field. But this would not reduce his supplementary cost. To the farmer the supplementary cost includes also the cost of maintaining his family and his animals and the rent and cess which he must pay in full. Unlike the industrialist, he cannot generally speaking, cut out the cost on labour and raw materials by shutting down his production unit partially or wholly. The lesser transferability of capital is also due to the fact that the cultivator looks upon agriculture as a way of life. Partly, the cultivator is conservative in changing from one crop to another because it involves certain drawbacks and difficulties. For the new crop, the technical operations, their timings, the rotation of crops, and even the fertility of the soil may have to be different. To give a recent example, in western U. P. some cultivators have changed from cane-cultivation to wheat-production. The reversion is now difficult because it would involve a transition-period of about two to three years before the soil could be made capable of yielding a normal crop of sugarcane again. Besides, the supply of capital is not so flexible in agriculture as in industries. A farmer who wants to expand his operations through extensive or intensive farming does not always get the necessary capital easily. Even when he does, he is at a loss to decide whether he should go in for

extensive farming. He hesitates to take a decision as to how he should change the proportion of the different factors of production. A proper combination of the factors of production is an important problem which leaves the farmer thinking.

To the farmer the farm is his home. His home is the farm. This restricts the transferability of enterprise too. He generally disregards the effect of his output on prices to a greater extent than does the industrialist. He finds it more profitable to raise all he can at the risk of getting a lower price than to let his resources idle and raise a small crop to be sold at a higher price.

Besides, farmers who have talents do not have the same opportunities in agriculture as in non-agricultural activities. Students of planning generally talk of family-farming which would provide full and productive employment for the family and ensure a high standard of living. But such farming does not enable the agriculturist to make enormous profits. Such limitations do not exist for the entrepreneur in industries. Agriculture may offer comparative security, a fair living and a steady income but it does not offer the same opportunities for high money incomes as industries do. Therefore, if greater money income be the end—really it is an end for many and seems to become the end for many more—farming would continue to lose men of capacity such as would be needed to run a series of hydro-works, to promote a corporation or to manage a chain of stores.

Keeping these broad differences in mind, let us attempt to study in some detail the economics of agriculture. The study can be made with regard to static conditions or dynamic conditions. It may be in the background of *laissez faire* or planning—private enterprise, state control or state management, with or without the application of co-operative principles. Again, the study may be with reference to the economy of (i) those engaged in agriculture, (ii) the people living in rural areas, (iii) those inhabiting the country, or (iv) the inhabitants of the world. In other words, the problems in agricultural economics, which cover also most of the problems in rural economics, may be approached

from many directions. In what follows, observations are made on some of the important problems, particularly in the back-ground of Indian conditions.

MARKETING

Economics is a study in valuation. What is the position with regard to the values of agricultural products? To a certain extent agricultural products are used to satisfy the needs of the producers themselves. In India more than three-fourth of the people live in rural areas and more than two-third of the area is devoted to food-production, and it may be assumed that more than half of the agricultural output is consumed by the agriculturists. What is therefore sold consists mainly of commercial crops and some food-products. The consumers' demand—or the market demand—therefore does not consist largely of the demand for food. With the exception of the demand for food, other demands may not be for a fairly regular quantity throughout the year. So on the whole the demand is likely to be more elastic than what it would be if it was largely a demand for food. This would mean that agricultural price would tend to be low and the agriculturist would run a greater risk of fluctuating sale-proceeds and financial losses. His chance of benefitting from higher prices would be further reduced if on account of his poverty, indebtedness, previous promises and strict realisation of taxes, he was forced to part with his produce just after the harvest. In that case, he would be able to secure still lower prices. If the farmer could be freed from these disabilities, then, at least with regard to agricultural food products, he would be able to hold back for some time the small percentage of the supply which otherwise he is compelled to sell. In such circumstances the non-agriculturists, particularly those living in the urban areas may have to face even an acute shortage of foodgrains. This seems to be partly the situation in India in 1951.

MARKETING AGENCIES

However, since agriculture is a small scale organisation and since the agricultural output is not the same as the consumers' requirement in regard to the time, place and form of

production, it is possible for the cultivator neither to serve the consumers directly nor to adjust his supply to demand. It is, therefore, necessary that there should be agencies which could collect the products in small quantities, grade them, if necessary, process them, transport them and store them. Incidentally, these services involve financing and risk-bearing.

These services may be performed by one organisation or by a number of organisations, each specialising in a particular task. These organisations may adopt large scale operation. But at least so far as the work of collecting the products from the cultivator and that of supplying them to the final consumer is concerned, the scale of operation would be small unless the co-operative way was adopted. The consumer does not want to walk even a few hundred yards to get his supplies and that explains why small shopkeepers can carry on their business in the face of competition from bigger stores. However, the farmer's organisation may be such that he may not have enough work for his traction-power (i.e. say, the bullocks) for some time after the harvest. It may also be that transport facilities are meagre and there is economical scope only for hauliers of goods working with donkeys, horses, and camels. Collection of goods by means of (say) motor-vehicles may not be economical on account of insufficient work to keep them engaged throughout the year. Moreover that would involve an additional investment of funds. Hence it is generally found that the farmer carries his goods himself to the nearest market.

The other stages in the marketing of the agricultural produce are generally looked after by big merchants and firms which are in a better position to study the market conditions and adjust the supply to the demand. Smaller organisations can also work progressively if the market intelligence could be provided by a government or trade agency.

The cost marketing may not be the lowest. There may not be perfect competition. Two causes of imperfection may be mentioned. One, the country dealer enjoys some degree of local monopoly. The farmer does not have the time and energy to find out what the other dealers are paying and what

can be secured in the other neighbouring village markets : nor has he the patience and capacity to postpone sales after reaching a village market. Two, the wholesalers are likely to be few in number and enjoy an element of monopoly on account of their large scale of operation. They may also amalgamate and thus strengthen their monopoly. Besides, imperfection results also because the supplies of products are not adjusted to the consumers' preferences. Though the consumers may be paying different prices for different grades, the local monopolistic dealers often consider it troublesome to pay the cultivators according to grades. Consequently with regard both to quality and to quantity the supplies may be different from the demand. This is undesirable from the point of view of the society.

Co-operative marketing. However an alternative marketing agency in the form of co-operative marketing society has come to be established in order to perform the services of the middlemen at a lower cost. Co-operative marketing has certain advantages. A co-operative marketing society is controlled by the farmers, enables them to have an insight in the market mechanism and secures for them higher prices. If the society enjoys a control over a sufficient volume of the output and if it is provided with market intelligence, it can regulate supplies from stock and modify the price level. Its supplies are likely to be more regular and assured. They are also likely to be graded and adjusted to the consumer price-preferences.

The dangers in co-operative marketing may, however, be mentioned. One, members may be loyal. Farmers with bigger farms may not be satisfied with equal voting rights. Members may be drawn away by the private dealers offering higher prices for the time being. If a system of pooling the produce is adopted, it may be resented by farmers who bring in better qualities of agricultural produce. Two, the manager is not likely to take sufficient interest in the working of the society when he is not well paid. And the farmers, being poor, can scarcely afford to pay him well. This would mean inefficient management. Three, theoretically the society may control a very large portion of the supply of a product and hence act monopolistically to raise prices.

State-regulation. The state generally tries to control and regulate the markets. In India the state policy is apt to be to regulate the markets by forcibly bringing into existence the co-operative distribution system. The greatest hurdle to the success of this policy is the lack of education and a feeling of helplessness of the public before those in economic power in spite of their democratic strength. But it is hoped that if the state could stick to the policy and take steps to educate the public in the principles and practice of co-operation, the co-operative system would develop successfully so as to act as a check to the exploitation by other marketing agencies. It goes without saying that the other marketing agencies should be allowed to function simultaneously. However, state-regulation through co-operative marketing appears to be a better method than state purchase and sale operations, which are generally recommended under agricultural price stabilisation plans.

SIZE OF THE FARM

An important factor in the economics of agriculture is the size of the farm. It has been argued by many that the size should be large enough to permit operations on as extensive a scale as is possible in industries. We have already noted that the scale of operation in agriculture is smaller than that in industry. The number of workers per farm is smaller. The gross output per farm is low. No doubt there are industrial undertakings which may be comparable to the farms in these respects; but the percentage of large undertakings is greater than the percentage of comparable large farms.

Why smaller farms? Why is it so? It may be suggested that the Law of Diminishing Returns applies sooner in agriculture than in industries. But why does the law apply sooner? As we increase the size of the farm, the cost of proper organisation increases at more than proportional rate. It takes an unusually long time to move quickly from one part of the field to another, and hence it is difficult to organise the operations. Also, an increase in the size of the farm necessitates the employment of more than proportional amounts of labour and capital. The size of the farm, therefore, tends to decrease. Besides, when more and more crop is taken out

from a farm, the cost of maintaining the fertility of the soil increases more than proportionately. The soil cannot recoup its lost chemical capacity as speedily as the farmer may wish. To give an example, sugarcane, wheat and cotton are grown in a certain rotation and for every rotation-cycle the field lies fallow twice, once for about two months and again for about six months. If another order of the three crops is tried, the yield goes down and it is felt that the loss cannot be made good by the use of fertilisers.

Lastly, the farm-operators work more efficiently when they have a feeling that the farm-products would accrue to them and their families. Agriculture requires constant and detailed care. This cannot largely be reduced to a routine. Its nature also changes suddenly due to sudden changes in weather conditions. So only one interested in the results of agriculture is likely to perform the task with the utmost sincerity and efficiency. This tendency has been observed throughout the world. In India it is made stronger by the deep-rooted love for ownership of land. Even agricultural labourers, when settled on land on a co-operative basis would not agree to joint cultivation. There is a strong tendency towards natural family-farming. If in any country there are present simultaneously low economic conditions and deliberately wrong leadership, there are apt to result small farms consisting of still smaller plots scattered all over the village (or a few surrounding villages).

Disadvantages of small farms. The disadvantages of such small-scale scattered-plot farming lie mainly in the marketing and technical diseconomies. Under such a condition the farmers are likely neither to buy their requirements in one or two lots nor to sell their products in bulk owing to higher transport and selling expenses. The proportional fixed capital expenditure increases and the scope for improved mechanical operation decreases. The farm-worker does not have to perform the same operation. He has to undertake ploughing, sowing, weeding, harvesting, the milking of the cow and the tending of the cattle. He may not be fit by aptitude for all these operations. In any case he cannot acquire skill by concentrating on a single operation, as in industry. There is, therefore, likely to be a drain of talented persons to non-

agricultural works, and hence to non-agricultural areas. Consequently, men of less organising capacity are left in agriculture. To a certain extent the disadvantages of small-scale scattered farming can be overcome through co-operation.

Best, maximum and economic size. There is often a discussion about the best size, the maximum size and the economic size (economic holding) of the farm. The best size for a farm would depend on a number of factors. Thus, intensive farming calls for more detailed supervision and the size of a typical farm tends to be smaller. On the other hand, the greater the difficulties of marketing—particularly, the more distant the supply and sale markets are—the bigger shall be the size of the farm. This is the situation with regard to tea, coffee and rubber. Again the greater the economies of combining agriculture with animal husbandry, that is, the greater the economies of mixed farming, the larger shall be the size of the farm.

Size of farms in India. The above discussion should not be interpreted to mean that in a country like India farms do not admit of being increased in size. But it is true that the rate of expansion is limited by a number of factors. There may be technical difficulties to voluntary expansion of the size of the farm. Thus, it may not be possible to add on farms adjoining to the existing ones due to the pressure of population on land and the land tenure system. Due to an uncertainty of irrigation, farmers may not be prepared further to give up plots situated in different irrigational parts of the village.

As a remedy for these difficulties, it may be suggested that there should be brought about consolidation of cropping or consolidation of holdings. If a desirably speedy result is wanted it cannot be achieved without legal compulsion. For over three decades consolidation of holdings has been attempted in some parts of India without complete legal compulsion and the results have been far from satisfactory. A few lakh acres of farms have been consolidated in a country of millions of acres of cultivated area. Besides, the work is likely to be undone on account of the transfer and subdivision of farms as a result of the unrestricted application of

inheritance laws, ownership rights and the subletting rights of the tenant.

LAND TENURE

In India, the landlords and the other intermediaries between the State and the tiller of the soil have exercised their rights more or less freely and in complete disregard of the interest of the society. This has been due partly to the impact of western forces and partly to the obstacles placed in the way of the readjustment of our position necessitated by the alien rule. The land tenure system affects the Indian economy vitally. There has been some serious thinking and talking about the nationalisation of land and socialisation of its use*. But such decisions should be conditioned by the economic situation of the times and the social scale of values. At times nationalisation can be effected by force and without compensation as in Russia, though it may involve coercion and force, torture and murder and threat to property and life. A more peaceful method is to pay compensation for acquiring the rights in land. But it may not be opportune to invite opposition, to increase the money in circulation and upset the budgetary position. The social scale of values may demand family-farming. It may also call for individual ownership of farms or perpetual or long-term rights of land-use by the farming families. If so, the drawbacks and defects of the undesirable land system shall have to be remedied by means other than the nationalisation of land and socialisation of its use.

SOIL CONSERVATION

Whatever be the size of the farm and no matter whether it is cultivated or not, the soil-fertility goes on diminishing every year. Partly, certain chemical constituents of the soil are lost through wrong cropping schemes and methods ; partly,

* While some people have been in favour of adopting collective farming on the lines on which it is carried on in Russia or Palestine, others have advocated the introduction of a system of co-operative farming, which is finding greater favour at the hands of the provincial Government in India. Experiments are being made in U. P., Bombay, Madras and Bengal but so far they have been successful to a very small extent.

the soil is bodily lost through erosion on account of the action of water and wind. We may either help or retard such a loss. If we help it, we help to upset the economy of agriculture as well as the stability of population-distribution. We help soil-losses when we continuously take out the same crops without necessary fallowing and manuring, and when we allow water and wind to sheer away the soil.

On the other hand, the loss of the soil-chemicals can be reduced through proper manuring, crop-rotation and fallowing. The Indian cultivators, as also other cultivators, do try to manure their fields as far as possible, consistent with their financial capacity, the interest in the field and its product. It is useless to argue that it should pay to maintain and increase the soil fertility even when the cultivator has no long-time interest in the soil. The cultivator would be little interested in the fertility of the soil, if his rights and obligations with regard to the use of the field are uncertain and temporary. Such defects where they exist must be remedied. In the recent Indian land tenure legislations many rights and privileges have been granted to the cultivators but there is less uniformity. Besides, the use of organic and inorganic manure depends also on their availability and prices—particularly as is the case with the supply of artificial fertilisers in India---as also on the ignorance or convictions of the farmers with regard to the importance and methods of conservation and use of farmyard manure, composts, green manures etc.

Soil Erosion. So far as the loss of the soil particles is concerned, the problem has, of late, received as much prominence as that of soil-erosion. The loss depends on the slope of the ground, the type of the soil, the nature of the rock structure, the extent and nature of rainfall, the existence of windbreaks such as trees, bushes and hedges and the manner of use of the farms and other areas. Thus the black soil erodes more than the loams. So do softstone and limestone rocks. Also, the less porous and less absorbing the soil-structure is, the greater is the water run-off and hence the soil erosion. A concentrated rainfall in a few hours causes more soil-erosion than a drizzling rain spread over a number of days. But most important is the effect of the manner of land-use on soil-erosion. Indiscriminate depletion of forests, overgrazing of cattle, fallowing, and planting of crops along

the slope which may be due to a foolish policy of the State, fodder scarcity and ignorance of the people may hasten soil-erosion.

The technical remedies of soil-erosion are easy to enumerate; afforestation including village forests, controlled grazing, contour cultivation, strip-cropping, crop-planning and construction of terraces, bunds and embankments and dams. But they are difficult to apply. Though many may not agree to some sort of state-regulation of land-utilisation, yet for a country like India even voluntary co-operation for anti-erosion work is not likely to succeed. Some sort of state-regulation—be it required only upto the demonstration stage—is therefore highly desirable. The Government of India as also some provincial Governments have devoted greater attention to soil-erosion studies and anti-erosion work. Thus, the U. P. Government has established a Land Management Board whose functions *inter alia* are to adopt measures to check further soil-erosion and to reclaim ravines and other areas badly eroded and to create executive organisation necessary to give effect to the measures. The Board may be empowered to investigate the best economic land-use not only for wasteland, canal banks, etc., but for any land and to enforce it provided the consent of a certain minimum number of cultivators has been obtained. Another method is to add a soil protection clause to the mortgage deeds.

Although in what has been said above, the state-responsibility for anti-erosion work has been almost conceded, it may still be asked if the State should bear any portion of the costs of maintaining the fertility of the soil. A farmer may argue that it is not his duty to protect the soil for the nation. And he is more likely to argue this way if he is not educated. But state assistance need not necessarily come in the form of financial help. True, the State may grant loans and concessions to those who undertake soil-conservation measures. Thus the Bombay Government gives loans at low rates and grants remissions in rent to zamindars undertaking village afforestation measures. But the State must spend more on research, education and demonstration about anti-soil-erosion methods. Lessons on soil preservation methods may be given a place in school education and a body of men trained in

the technique of anti-soil-erosion work. A few years back the Bombay Government undertook a bunding-experiment in the Bijapur district which cost lakhs of rupees. The bunds gave way and caused a loss which would otherwise have been caused in ten years, because *inter alia* the Public Works Department did not possess sufficient technical knowledge to execute the work properly.

IRRIGATION

The problem of soil conservation is a long period problem, but it is at many points intimately connected with the problem of irrigation. Soil-erosion has led to the decrease in well-irrigation in the U. P. districts of Mathura, Agra, and Etawah because the waterlevel has gone down to about one hundred feet on account of soil-erosion elsewhere. Erosion also leads to a decrease in the moisture content of the eroded area. On the other hand, multi-purpose river-projects help to reduce the ravages of soil-erosion by collecting the surplus water before it can do any damage. But in irrigation, both the long and short period problems are important.

Irrigation of a farm may be due to direct rainfall, water stored in a tank or reservoir, well-water or canal-water. Compared to the rain-water it is costlier to use any other water on the field and it would be economical only if there was a greater or better yield. As is the case in India, the rainfall may be unevenly distributed both with regard to time and place. Consequently, crops may be uncertain. Agriculture then becomes a gamble in monsoon. In such cases, the higher cost of other types of irrigation may be covered by the uncertainty of rain-irrigated crops. Thus in India it is desirable that the dependence on monsoon be reduced.

Where an attempt is made to construct canals, there is likely to lurk another danger. In U. P. canals and tube-wells* have been developed not so much in the arid regions

*From the financial point of view the U. P. tube-wells have been an unprofitable proposition and the Government wants to increase the rates by about 75%, which is too much. However, a Hydel Rates Committee is to report on this question.

as in areas served by wells. The result is that they have replaced the wells and not supplemented them—an economic waste. In order to determine the correct type of irrigation for the different parts of a vast country like India, it is very desirable that there should be a complete hydrographic survey.

In the canal irrigated areas, the system of charging according to the water supplied has raised a serious problem. There is no uniformity with regard to it in India. We have different systems in different parts of the country. Two main methods are, charging for water (i) by volume and (ii) by the area irrigated. In the latter case the tendency always is to use water lavishly and uneconomically. In the former case the attempt is automatically made by the cultivator to use the water to irrigate the greatest possible area. That has been the experience not only in India but in other countries also. In order to avoid wasteful use of water a number of methods may be suggested. One, the cultivator may be educated to realise that an overdose of water shall prove injurious to the crop and that it is his social responsibility not to waste water. Two, the water supplied in each case should be measured by volume, that is, a cheap meter should be invented which would not be tampered with by the cultivators. Three, the irrigation rates be merged in the land revenue rates of the canal-served areas. It will then not encourage the farmer to put off irrigation to the last moment and insure against the worries of watching wind and cloud and seeing if one cannot evade part of the water-rate. Of the three methods the third seems to be the best. But in any case it is essential that the efficiency of the irrigation department must increase. It should not increase the canal-and distributary-channel mileage without a corresponding increase in the volume of water. For, it would otherwise mean that the demand was in excess of supply encouraging all sorts of dishonest practices. Many a cultivator takes an excess dosage of water because he is not sure whether he shall get another chance during the season or not.

Another problem is whether the earnings from irrigation should cover the expenditure on an irrigation project. For long in India and even in some other countries the policy has been to make the earnings cover the expen-

diture. In India we had productive canals and protective canals. Fortunately the policy has been given up, as it should have been, because the benefits of irrigation reflect themselves not only in the proceeds of the water-charges but also in rent and revenue through higher productivity. Whether an irrigation project is to be undertaken in a tract should really depend on whether the tract requires irrigation facilities or not. As an irrigation project is a long period investment, its results would accrue to the state coffers in the long period: consequently, the project may be financed out of loans whose burden is always on posterity also.

Yet another irrigation-hurdle is that of inter-state disputes. One state (or unit) situated in the upper reaches of a river may try to use all the water because of sovereign right of ownership of all waters within its borders. Another State may claim the right to an undiminished flow of the river. Such disputes have been known to stop the progress of irrigational facilities and deny the people their economic benefits. The best way to resolve such deadlocks is not through the law courts but through representative central bodies.

CROP PLANNING

Irrigation facilities do away with the uncertainties of crops due to insufficient rainfall, but they do not warrant that the right crops shall be grown. It is quite likely that the farmers grow crops which fetch them higher prices. Their objective may not be greater yield but greater sale-proceeds—greater money-incomes. It may lead to the production of more of commercial crops and less of food crops. It may lead to the growing of crops for which the farm is not best suited. The problem of the best economic land-use that was referred to in connection with soil-erosion arises here also. In planning its agricultural production a country must take into consideration its requirements of food, industrial raw materials and exports.

We must answer the question, "What are these requirements?" To a large extent the answer depends on the nature of wants but these wants must be and are adapted

to the productive capacities of the particular regions which the consuming people inhabit. If all the Indians began to consume rye-bread, or if all the refugees decided to consume corn, it might not be possible to produce all the rye and corn needed, at least, not economically.

Economy of production is, however, not the only objective. For one may well say that the greatest amount of iron is contained in *til* and that each Indian should consume two *chataks* of (*til*) seeds daily. But it may not be palatable and digestible. In consuming commodities we have to bear in mind the economy of their production, palatability, digestibility, methods of cooking and eating including the extent of mastication. Again, a family may spend a certain amount of money on, say, (i) oranges, (ii) cheap vegetables like radish, tomato and potato or (iii) cereals. The resultant nutritive value per rupee will be lowest in the case of oranges and highest in the case of cereals. If the family goes in for attractive and flavoured oranges, it may spend a greater proportion on oranges than the family-income would justify. It is also possible that the family may not be aware of the nutritive economy of the different groups and combinations. Similarly, a less economical consumption budget may be due to the fact that the housewife is ignorant of the economy of the different ways of cooking and preparations. Thus the water in which rice is boiled contains in a dissolved form most of the nutritive elements of rice : yet it is often thrown away because preparations of this water are not in vogue. It is therefore of the utmost importance that studies be made with regard to consumers' purchases, kinds and amounts of food eaten, the relative nutritive value of different foods and even the comparative economy of the different methods of cooking and preparations in order to help the consumers solve their problems and the producers to provide the supplies which are most needed. There is a woeful lack of such studies in India. Recently the U. P. Government has been collecting the consumption budgets of certain classes of educated persons and even there a complete co-operation is lacking. Even educated people do not seem to realise the importance of these studies. Such studies are therefore difficult to make; but they can and must be made.

Greater India lives in the rural areas—nearer fresh air and Nature. The rural people have their own problems of consumption which would affect our crop-plan. It is true that the villagers are found to consume anything from wheat to *Mahua*, but they are healthier than the town people. Yet a section of them has to purchase food and fuel; and yet another section has to wander about in search of employment. The result is a woeful living for thousands of rural families. If we want to reduce their sufferings, we will have to reorient the crop-plans to produce more food, fuel and such products as are needed by them and can also serve as avenues of employment.

While we are thinking of the consumption problems of the farmers, let it also be emphasized that new improvements are required as much in the farmers' homes as in their fields. There is a tendency to ignore the provision of better facilities to the housewife and the children. Where *ghee* is produced, it is not available for consumption to the members of the family. Where eggs are graded and sold the consumption of them, in the family decreases as it has done in the north-western parts of India. These forces must be counteracted; and in counteracting them the production-plans may also be affected.

Let us turn our attention once again to the production capacities of the different regions. The production capacities should be maintained over long periods of time. We referred to these in connection with soil-conservation. In any country which has a long line of peasantry, we cannot overestimate the experiences accumulated over generations of peasant-life. The modern scientist demands a knowledge of the major groups of soils. He asks for a complete soil-survey and land-utilisation maps. He seems to believe in beginning afresh, in complete disregard of the accumulated knowledge of the farmers. The Indian farmers have, in the form of proverbs and sayings, hundreds of detailed instructions with regard to what to grow, what operations to perform, how to regulate operations according to changes of *Nakshtra*, wind direction, climate, etc. These have been interfered with on account of the changes introduced during the past two hundred years. It is, however, true that the cultivator seems to be modifying

these unwritten codes to suit the new commercial crops and introducing new methods of cultivation in the country. The accumulated experiences and the current practices should not be ignored. It would be wrong to decry the use of organic manures and push the use of artificial fertilisers.¹ The farmer is very likely to refuse to accept the new suggestion because, if nothing else, he soon finds that the artificial fertilisers¹ are not only more costly to purchase but also are not effective without an abundant supply of water. In 1937, Sir John Russel had drawn our attention to another end when he recommended that the agricultural economic aspects of mixed cropping should be studied in view of the widespread use of this practice and the possibility that some crops mix better than others. Mixed cropping means sowing a mixture of the seeds of different crops and thus harvesting from the same field more than one crop at different stages of a period of cropping.

The yield in any field also depends on the rotation of crops, mixed farming and the varieties of seed². The technique of cultivation also has its effect on the yield and to a certain extent it depends on the type of tools and implements used by the farmers.

Research, including comparative studies leading to new adoptions, improvements and inventions must be followed by a demonstration in the farmer's field to convince him of this value and by the provision of supplies of the new varieties of seeds, tools and implements. When convinced, the farmer has readily adopted a new crop, a new iron ring to the plough and a new cane-crusher.

Animal Husbandry. While discussing the problem of the best size of the farm and the yield, a reference has been made to

¹In India a factory is being established at Sindhri (Bihar) for the production of artificial fertilisers. But the Government is aware of the limitations of their use.

²Mention may be made of the important report on the Technical possibilities of Agricultural Development in India (1944). In it, Dr. Burns, an Expert of the Government of India, has reported on the possibilities of increasing the yield per acre by using better seeds and manures, controlling pests and diseases and by adopting proper methods of cultivation.

animal husbandry. The important animals in this connection are the cow, the buffalo, the bull, the bullock and the poultry. While we have less of poultry farming in India, there are too many of the other animals mentioned above. If in a country the fodder situation worsens, it is to be expected that the population of these other animals shall also decrease. This has not been the case in India. Some of the important reasons are the prevalent technique of agricultural production, the importance attached to the supply of manure to the fields in the form of cow-dung, and the religious sentiments. The second reason is the most important from a long period point of view. The mixed farming experiments being carried on by the Indian Council of Agricultural Research in the different provinces indicate that a proper system of mixed-farming not only solves the problem of fodder but also results in an increased quantity of dung and a greater income. The system has been successfully adopted in many countries and may be popularised in India as well. But any such method must be accompanied by better breeding and elimination—through castration and slaughter—of the weak and the undesirable cattle. In India at present the common sentiment is against the slaughter of the cows and their use for draught purposes. Although these have been prohibited from the Vedic times and throughout the *Smritis* and the *Epics*, the same view is not held in the *Dharamshastras*. There is evidence enough to show that cows were slaughtered and even used for draught purposes. The inviolability of the cow appears to be based on utilitarian principles, which should today justify the slaughter of cows and their use for pulling the plough and carrying burdens. But the first step, that can successfully be taken in India, is to segregate the inefficient and the dry cattle as is being organised as an experimental measure by the U. P. Government near Mathura.

AGRICULTURAL CREDIT

The plough and the cancrusher remind me of one of the most important problems in the economics of agriculture which I have evaded so far—the problem of capital and agricultural credit. Capital is as essential for agriculture as for trade and industry. Just as few traders have their own capital, the farmer too does not finance his agricultural operations

himself. He has to take loans in cash and kind, from others for buying livestock, implements and fertilisers; for improving the land; for meeting the current working expenses; for carrying on production in bad years; and sometimes for holding up sales in a period of rising prices.

Rural credit has to have certain characteristic features because of the difference between agriculture and trade and industry. Although it means slight repetition, it is well worth recalling that agriculture differs from the other group in regard to the nature and length of the operations and the rate of yield on the invested capital. It is to a larger extent dependent on the vagaries of the monsoon and does not involve mere mechanical transportation of raw materials according to a regular process. Its commodities are highly perishable; some of them can be preserved for thousands of years but the methods of preservation are not likely to be available to the ordinary cultivator. The system of production cannot be altered easily and quickly. Consideration must also be had of the fact that partly due to his habits and partly due to the uncertainties of production, the agriculturist is not in a position to forecast his credit requirements well in advance of the time when they actually arise.

Agricultural credit must be for a period (i) corresponding to the period of cultivation in the case of working expenses, (ii) extending to a few years for the purchase of bullocks, implements etc., and (iii) extending to a long term for the purchase of land, for making permanent improvements in land, for sinking well, etc. Apart from this, the criteria of an ideal agricultural credit agency may be put down as follows:—

1. Availability of credit at all times and without delay.
2. Possibility of the extension of the term of the credit in case of crop failure.
3. Flexibility of the resources of the credit agency.
4. Ability to find out full facts about the borrower readily.

5. Power to ensure the correct use of loan.

6. Strict realisation of the dues at the right moment, through the sale of the borrower's produce or as soon as money reaches his hand.

The commercial banks do not provide such credit. They are able to invest their funds in other, and more profitable channels provided by trade and industry. Nay, their activities have been adapted to the needs of trade and industry only. Their apathy is also due to the difficulty of assessing the borrower's solvency, inability of the borrowers to furnish adequate guarantee and mortgage, uncertainty of the return of principal and interest in time and the danger of ultimately being left with unrealisable frozen assets.

Credit for agriculture may be of three types. In some cases, the financial aid cannot be expected to be returned due to gross inability of the agriculturist. In other cases, a partial repayment of the credit may be had with the probability that such provision may improve the borrowers capacity to repay loans. In still others, the loan is to result in the repayment of the principal as well as a fair interest.

Greater stress is generally laid on the provision of the third type of credit. It is so not only in India but in other countries also. The fact, however, is that in order to rehabilitate the economy of many an agriculturist finances of the first two types are also needed. Credit for supply of improved varieties of seed is an example of the first type. Agriculturists may be given new variety of seeds free of charge provided they agree to grow them in their fields. Credit for the construction of godowns for the storage of seed, produce and even manure, may be cited as an example of the second type. A part of such credit must not be expected back: a part, however, may be given as a loan repayable slowly over a number of years. The availability of storage facility in the rural areas and in the important markets helps the agriculturist to adjust supply to demand and thus get a better price. Higher price in turn tends to increase the income and hence, the repaying capacity.

Credit of the first two types has generally to be provided by the State. Ordinarily the term "credit" is not considered to indicate such credits. It is understood to stand for financial help which has to be repaid, generally with some interest. In the rest of this chapter "rural credit" will be taken in this sense. As such, it has some characteristic features. Hence there is a necessity for special types of institutions to provide agricultural credit. Those should be as local as possible.

Sources of credit. The agencies which provide agricultural credit in India are:—

1. Indigenous money-lenders including the Zamindars and even tenants.
2. Co-operative societies including credit societies, land mortgage banks, marketing societies and even the grower's societies.
3. Banks including the Reserve Bank of India.
4. The State.

All these sources stand criticised: yet, some or all of these have to be reformed or remodelled and used for providing future agricultural credit. It cannot however be said how much agricultural credit has to be provided. The targets in regard to the various types of credit are indefinite because of at least two factors. Firstly the cost of production budgets of the agriculturists are not available. Secondly, the amount and particularly the distribution of the old debts are not known.

In the past the agriculturists have been allowed to accumulate a debt which is expected to show a substantial decrease due to the World war II and the subsequent high prices. It is true that a conclusive answer cannot be given in regard to the present rural indebtedness without detailed statistical enquiry. Enquiries in Madras and other small place and village results show that so far as the tenants and landless labourers are concerned, the indebtedness has increased. It has, how-

ever decreased in the case of landlords and big tenants who, in all probability, had a surplus to sell. Yet compared to the position in 1939, there is a reduction of about 20% in the estimated provincial total debt as well as debt per capita. If the low value of the rupee is taken into account then the real burden of the debt in Madras may be said to be about one-fourth of what it was in 1939.

A very encouraging picture. But such low real burden may change to a staggering real burden unless three steps are promptly taken. One, agriculture should not be a deficit economy. Two, the agriculturists should no longer be allowed to fall helplessly an ignorant prey to the Mahajan. Three, the debts be made self-liquidating.

The above remedies are more relevant to those sections of cultivators whose debts have really decreased. As is evident from the enquiry regarding rural indebtedness made in Madras as also from a few studies made in U.P., Gujrat and Bengal although the greater part of the debt is still in the accounts of the medium and small landholders, so far as the tenants and agricultural labourers are concerned, their debts have in all probability increased. These two groups easily make up one-fourth to one-third of the cultivating-population. For them the solution does not lie so much in better agricultural credit facilities as in more employment facilities. Of course, for the organisation of non-agricultural activities in the rural areas credit shall have to be supplied. We have really to plan not for agricultural credit but for sufficient and easy rural credit.

Besides the four sources of agricultural credit mentioned above, there is now, as a result of the recommendations of the Indian Agricultural Finance sub-committee, a fifth source agricultural credit corporations. These can be organised but the cooperators in India are vehemently against their formation and have claimed that they can provide the same service, as is ultimately expected of the credit corporations, and at a lower cost, provided the government extends to the cooperative credit structure the same facilities that have been recommended for the agricultural credit corporations. There is much truth in what the cooperators say. Certain provinces

like Bombay and Madras can make much progress without the establishment of corporations. The report of the sub-committee deserves to be read carefully before the recommendations can be vehemently denounced. In any case, the cooperative credit structure has to be improved and the indigenous money-lending has to be controlled with regard to their accounting and other practices.

By now sufficient has been said to give an idea of the economics of agriculture and rural areas. Let light be now shed on the economics of certain industrial and urban problems.

CHAPTER XXIV

THE PROBLEM OF LABOUR

The question of Labour, both nationally and internationally, is of first importance. Economic stability and welfare of human society depends upon equitable solution of the Labour problem. The question in essence is to discover a just and an honourable relationship between the various elements that compose the economic stratification of modern communities. In the progressively correct adjustment of these matters will lie the increasing efficiency and happiness of the peoples of the earth.

Definition of Labour. It must be understood that through the centuries, the concept of the term Labour, has grown and enlarged. With change in the technique of production, and the consequent alteration in the economic structure of society, Labour too has undergone change in status. In the term Labour is now included not only manual labour but mental exertion as well, undertaken on behalf of another for a given reward. It will be sufficient for our purpose to accept the definition of the term Labour as given by Dr. Marshall. His definition is comprehensive and all inclusive. Dr. Marshall has defined Labour "as an exertion of mind or body, undergone partly or wholly with a view to some good other than the pleasure derived directly from the work."* Labour, therefore, includes workers both of hand and head, who work for others for a given payment in cash or kind. The term Labour is therefore heterogeneous comprising all categories of people, who work with brawn or brain for a given reward on behalf of others. The old connotation has been completely transformed. Highly trained and skilled technicians, operators, supervisors, clerical and salaried staff are as much a part of the labour force as the unskilled or semi-skilled manual worker.

Date of the question. The problem of Labour is regarded by most social investigators as of modern date. It is held to

*Marshall's 'Principles of Economics.'

have its beginning in the Industrial Revolution. The changes in the techniques of production ushered in by the Industrial Revolution first took place in Great Britain. In reality, however, the problem is as ancient as the time when human groupings reached the stage when specialization of economic functions led to the divergence of economic interest. The early beginnings of the ownership of capital in the process of production led to dissimilarity of economic interests in the matter of exchange and distribution. The institution of slavery, which is one of the earliest institutions in human social grouping, can certainly be regarded as the first beginning of the question of labour. Slavery of all forms and degree, from ancient days and medievalistic times, manifested itself in various types of feudalistic labour. All manners of land tenure systems, socage forming and the like carried their own specific impositions upon bondmen and serfs and even free labour. The lord of the manor wielded varying degree of power over the different grades of labour upon his land. Artisans and craftsmen by way of being apprentices, and journeymen were fixed in their status and enjoyed rights and rewards fixed according to the Guild system to which they belonged. Their movement, their apprenticeship, their remuneration right through the Middle Ages was thus determined by the Master-craftsman and their Guilds in rigid manner. Indeed the slave, the serf and the bondman are but the forebears of the presential working man in our social system. Nevertheless in some essential features the Labour question can be more accurately regarded as a modern problem. It has emerged as an inevitable consequence of the Industrial Revolution. The changes of technique in the process of production and exchange, the hall-mark of the industrial Revolution, ushered in a new era in human history. This was particularly so in reference to labour. The discovery of water and coal as power resources largely displaced human muscle-power as source of industrial energy. Human labour power dwarfed in comparison with these newly discovered power resources latent in nature. Human labour declined in value and fell in status as a consequence.

Capital Instruments and Appliances. For the proper utilization of the newly discovered natural power resources of water and coal, it was necessary to have requisite mechanical

equipment and appliances. In other words, capitalistic instruments of production and transportation were the inevitable vehicles through which these newly discovered power resources could be utilized. Therefore, instead of the simple, traditional, and inexpensive tools and implements, there came into existence the modern complex and costly tools and machinery. Modern equipment and plant was not only heavy in cost, long in incubation and uncertain of duration, because of fear of obsolescence, but also laid down with rigidity the lines upon which the course of industrial evolution could run. The construction and creation of these modern establishments required much financial assistance. The need for capital and finance, stimulated and developed, in marked manner, the banking and credit agencies, simultaneously, with the expansion of industrialisation. Financial houses, stock brokers, under-writers, promoters and all manner of speculators sprang up to provide the where-with-all required by entrepreneurs and captains of modern industry. The financing of industry through the money market, became a pre-eminently important matter. Owners and manufacturers themselves gradually became more and more dependent upon financiers. The suppliers of credit and industrial finance obtained the controlling shares over commercial and industrial enterprise. Due to the emergence of the joint stock system, and the introduction of the limited liability principle, ownership itself became diffused and divorced from direct control. That is to say, the mills and mines and other establishments, instead of belonging to individual persons or families, were now, more and more, owned by a vast multitude of stock-holders. Instead of the live personality of the individual owner or the members of the manufacturer's family being the masters, industrial establishments came under the control of impersonal institutions, like Managing Agencies, Board of Directors, Trusts and Cartels. These Directorates or Agencies imported mechanical relationship between owners and workers. Instead of the personal touch that existed between employers and employees of older times, impersonal relationship developed. The profit-making objective became the sole concern of these new industrial establishments. Dehumanisation of industry has to answer for the labour unrest experienced in most nations to-day.

Depersonalisation of the worker. In the mechanisation of industry, human skill and dexterity, as apart from human power, was also placed at discount. The worker from henceforth became a mere cog in the wheel. Much of his skill was taken over by the machine. The power of initiation and creation was denied to him. The opportunities of self-expression and self-realisation which men could obtain for themselves in and through their daily task, as apart from meditation and religious devotion, were now denied to them. The joy and happiness of the craftsman, however humble his art, was lost for the vast majority of the working classes. His work was set for him by the task master. It was mechanically standardized. The workman was depersonalized. This result of the Industrial Revolution has probably more basic significance than has been attached to it by students of the problem of modern unrest. Psychologically it may well prove to be the profoundest. The expansion and flowering of human personality through work, was now cribbed and confined. Routine processes and repetitive work were all that was left for the masses to carry out. The conflict between Man and Machine thus originated. The present-day labour-saving and other devices, generally known as rationalisation, is but the latest phase of the more than a century old conflict between man and machine.

Mass Employment. Another characteristic of the Industrial Revolution was that capitalistic plant and equipment required mass employment of labour. In the technique of those early days mass employment was necessary for mass production. The employees instead of being known to the employers by name were now known to them only by their numbers. The workman instead of being regarded as a human personality with his wife and children and dependents, who in the olden days were also known to the employers, were now reduced to and known by a mere arithmetical number. The money nexus became the only connection between the workmen and their employers. This created certain aberrations in Management-Labour relationships which have led to the creation of the present-day labour problem. Personal loyalties and attachments were destroyed. The give and take of work and life ceased. The profit motive on the one hand, and class hostility on the other poisoned

at source, the Management-Labour-relationship. Ruthless competition set in. It was fight for survival. The weak went to the wall. Destitution of the old, the weak, the decrepit and the unemployable became wide-spread and distressful. Old time regulations, assistance and provision were discarded and forgotten. The community sense was lost. Fullrein was given to egotistical propensities embedded in the nature of man. The consequences were remorseless in their effect upon the under-privileged of society.

Urban and Social problems. The necessity of the presence of masses of people in given locations created in their wake several serious civic and social problems. As the science of modern town planning and the knowledge of public hygiene were not developed, industrial cities, mining and port towns grew up with total disregard of the laws of public health and communal living. The sudden and unprecedented movement of the rural population into the newly created industrial towns gave rise to some of the most complex and obstinate problems of modern city life. Slums grew up, giving rise to insanitary dwellings, overcrowding and sweating of dwelling-sites. Such congestion resulted in social evils which have tended to devitalise the physical and moral fibre of the urban populations. The weakening of family life, the increase of infantile mortality, the spread of contagious diseases, tubercular and venereal, took heavy toll of life. The spread of particular social vices, as in the increase of gambling, drink and prostitution were some of the evil consequences that entered into urban life of the nations due to rapid industrialisation. These have created a group of social problems that directly impinge upon the social welfare of the working classes and the community at large. The concentration of these evils, some of them ancient indeed in their origin, has been the bane of modern civilization.

The Doctrine of Laissez-Faire. The position of the working man was made completely defenceless because of the philosophic and economic sanctions that were available to support the changes ushered in by the Industrial Revolution. The workman instead of being protected by status, as apprentice, journeyman or artificer, according to the usage of the Guild system on the one hand, and Parish traditional control on

the other, was left isolated and unprotected by the new legal system. In theory and practice the Law changed his position from one of status to that of contract. The conferment of the Right of Contract was indeed a remarkable legal revolution. It gave freedom of movement and action and a higher position to the workman than he had ever previously enjoyed in the past. In the eyes of law a workman henceforward was regarded as free and equal as any other citizen of the State, high or low. The dignity of the individual was established. The concept of contract conferred upon workmen equal status with their employers. At one stroke as it were, the age-long shackles, disabilities and inhibitions were dissolved and discarded. Masses of human beings who were so far kept down as vassals, serfs and bondmen or as townsmen of limited rights, were given co-equal status with the rest. The greatness of the achievement of the legal freedom and the assertion of the Equal Rights of Man as Man, cannot be underrated. But this very legal freedom produced problems of great gravity in the body politic. The reason is that legal equality, without economic ability is but a matter of academic satisfaction only. It is of little assistance in every-day matters of practical importance. In order to make legal equality a matter of effective reality, some measure of economic security is essential. The rights, for instance, of a poor man as against those of a rich man are not easily established, even in courts of law. The principle of legal equality may thus remain a fiction and a dangerous delusion. In the course of its operation there is little doubt that the principle of *Laissez-faire-Laissez-passer* has engendered bitter resentment amongst the masses. It has created social friction and has disturbed the peace and unity of society. But there was remarkable unanimity of opinion amongst philosophers and scientists at that juncture of history, to accord to individuals freedom of action. The classical economists, the philosophers and the scientists believed in natural laws. They relied upon the effectiveness of the principle of self-interest, operating through the process of competition, to adjust reward to merit. Need was to be met thus. Interference in any manner was deemed as unnatural. The unfit were to be eliminated. Mercy and charity had little part in their concept of things. In fact they looked upon them as unjustified interference with the unerring process of nature. The fundamental principle

of law was natural liberty, operating through natural order, leading to natural harmony. It was held by this school of thought that the individual, seeking his own good, would without let or hindrance, unconsciously promote the good of society as well. Thus the good of the individual was linked with the good of the community. In the quest of one, the other was fulfilled. The "invisible hand" saw to this in the dispensation of nature. This intellectual conviction led to an abhorrence to the formation of any type of association or organisation either of employers or of workers in the furtherance of their respective interests. All such organisations, employers corporations or trade union formations were regarded as interference with the natural process of things. The doctrine of *laissez faire* and *laissez passer* was accepted as fundamental to the establishment of a just social order. The philosophical school of thought annunciated that it was in the best interests of the individual himself that he be given no kind of assistance and protection in working out his own economic and social salvation. Struggle was essential for progress and development. Thus all attempts by labour either to seek redress by way of old statutes and enactment, customs or traditions, were denounced, and made null and void. Attempts to organise clubs or associations for purpose of "collective bargaining" were ruthlessly suppressed. All such group action was looked upon as subversive and contrary to the laws of nature. They were assumed to act in "Restraint of trade", and thus contrary to the good of society.

The Challenge of Labour. The course of the past century and over has, however, given a different verdict to the soundness of the conclusion reached by the *laissez faire* school of thought. Workmen, supported by humanitarians and philosophers of the radical school, challenged the basic soundness of the classical doctrine. They maintained that the social process and the economic set up of the times did not in itself guarantee the welfare of the weak or the economically powerless individuals or groups. With concentration of financial resources, and capitalist control, operating through banks, trusts and cartels, and supported by powerful political groups, the isolated individual, economically low placed, could not find the

*English and Combination Act of 1799 and 1800.

necessary opportunity for education and training, to be able to seek gainful employment as was so readily assumed by the classical philosophers. In times of depression and mass unemployment, occupational and transitional changes, the isolated individual was helpless. He could as much determine his course of action as a rudderless boat could steer its course in a turbulent sea. In order to secure a footing in the economic system, and to survive in the struggle for existence, the formation of workers' organisation became inevitable. Thus arose the Labour movement. Through decades of bitter struggle it evolved for itself in the process, the instrument of the trade union. It has now been fashioned to point of great effectiveness. The "Right of Collective Bargaining" has been the objective of the Labour Struggle. The essentials of the labour conflict are not only for adequate wages, better conditions of work, reduction of hours, and other securities of life for the maintenance of given standards of life. The Labour struggle is also for the sake of active participation and collaboration with Management in the conduct of the industry itself. It is not merely the negative demand to protect the working classes, but the positive objective to raise their status and dignity in the social system of to-day. It is this that constitutes in essence the Labour Problem.

CHAPTER XXV

TRADE UNIONS

"The Invisible Hand". In order that Labour should not be treated merely as a Means to an End, it has been established, over the course of a century and more, that Labour should be accorded what is known as the Right to Collective Bargaining. The vindication and establishment of the principle of Equality as between Man and Man in the eyes of the law, has been one of the notable achievements in the process of human progress. It is one of the tragedies and paradoxes of human history that when the principle was accepted and acknowledged as basic to the structure of civic rights that men, especially of the low-income categories, should have suffered so acutely as they did, due to ruthless competition and other social and economic upheavals caused by the Industrial Revolution. Whatever may be said of the injustices and disabilities of the feudalistic and Guild system of life, it must be indicated that they afforded protection and security of existence to the masses and the artisan classes in particular. But with the annunciation of the doctrine of the freedom of the individual, and the pronouncement of his equality, he was left entirely to his own resources to secure and maintain a footing in the new economic order. Old laws granting shelter and protection were made null and void. New ones had not even been thought of in the polity of those days.* Each person was left to fight for his own hand. Legal and civic equality was a vitalizing principle and contributed much towards social and economic progress. But in the case of the masses, who were ruthlessly ousted from their traditional occupations in agriculture, arts and craft by the new processes, inventions, and discoveries were indeed reduced to abject poverty and helpless destitution. The fact of legal equality, without economic ability meant but little assistance to them. With no employment, little financial resources, with themselves and their families in dire need, the bargaining capacity of the isolated individual workman against the resourceful and masterful employers was of little avail. The terms of

*The Law of Trade Unions, by H. Samuels.

wages, duration of hours, conditions of work had to be accepted or workmen had to face starvation. The sufferings of men, women and children have disfigured the page of history wherever the impact of industrialization has come upon an older type of agronomic-cum-handicraft civilization. The bare principle of Equality, without securing measures to make it effective, is an empty civic allurements. The dread of Collective Rights was so great that combinations of all types were denounced as "restraint in trade" and were not countenanced in law. The principle of freedom, and the process of competition were regarded as natural. They were held to be the most effective way of securing the economies of life for the combined good both of the community and the well-being of the individual alike. The "Invisible Hand" according to the doctrine of the Natural Order philosophy would harmonize the interest of the individual with that of the welfare of the community. But the process was painful and costly in terms of human lives.

Right of Collective Bargaining. Workers, and their friends both among men of thought and action, gradually recognized the necessity of securing some group rights for the workers. They worked and agitated to obtain for them the Right of Collective Bargaining. Bitter and prolonged struggles took place in the course of the Labour movement in the different countries of the world. It was by slow degrees that this fundamental right for the working classes was secured. The right conferred the usage that the individual, isolated workmen could bind themselves in groups or associations, in freedom, to secure by the process of joint negotiation, the settlement of the terms and conditions under which they would elect to work. The State and the employers reluctantly acceded to this principle. But with the expansion of the democratic principle, and the broadening of the forces of liberty, and the keener perception of equity of the social and economic rights of groups and individuals, the process of collective bargaining has been accepted as essential by all democratically controlled countries. In recent years the International Labour Organization has been a powerful force in the extension and acceptance of this process throughout the world. The institution through which this principle operates is known as trade unionism.

Trade Union. Some of the principles according to which trade unions are formed and worked are universal in their application. There must, however, be considerable elasticity in the composition and function of trade unions according to the stage of industrial development, advancement of education and general civic awakening in any individual country. No rigid rule can be prescribed as a fixed pattern for workers' organization. National history, indigenous associations, the economy of the country and its political structure would have much to say as to the shape and form trade unions would take in their respective national climates. Nevertheless, some features are almost fundamental in the formation of workers' unions.

"Open Shop" System. The Open Shop system must be regarded as a primary condition in the formation of trade unions. No worker should be forced to join a workers' organization if he is disinclined to do so. Complete protection must be accorded to a worker to exercise his right of choice in this matter. While it is not necessary to encourage egotistical propensities of individuals, yet it is not desirable to coerce men against their best judgement. Even sections or groups of workers who desire to stay out of a trade union should be permitted to do so. This is cardinal principle of true democracy. Naturally, it must be seen that neither the individuals nor the sectional groups act in manner inimical to the broader interests of workers within or without the factory or establishment. Employers, political groups, personal and individual ambitions, may cause men to exploit the position of disunity among workers to the detriment of the general good of the working classes as a whole. Black leg activities or other disruptive tendencies must be eliminated. The essential unity of the working classes must be preserved. Multiplicity of trade union formation in the same industry or the same locality is tendency that must be guarded against by vigilance and sagacious handling. This is one of the weak points in the framework of our trade union formation. Formation of working class associations on a variety of ideologies is inevitable. Room must be provided for their existence and legitimate expansion. The State must maintain an attitude of strict impartiality. So long as trade unions remain within the bounds of the law and are loyal to the State, they should have nothing

to fear at the hands of Government. Subversive action, attempting to overthrow the State, cannot, however, be permitted. In a democratically controlled State, the only manner in which change in law, or change in government or change in constitution can be made is by appeal to the electorate or a referendum to the peoples. Recognised constitutional means alone can be exercised to bring about political transformation. A General Strike to coerce the Government, for instance, cannot be countenanced or allowed in law. Indeed, as far as feasible, trade union activities should be confined to specifically labour and technically allied problems. Political issues should be examined, debated and determined by political organisations set up for the purpose. For this provision is made in Trade Union Acts to create separate funds for political ends. Members are free to join or to abstain from contributing to such funds as they wish. The "Contracting-in" clause is preferred by Labour leaders to the "Contracting-out clause for obvious reasons". While it is not always easy or possible to discern the line of demarcation, yet the distinction between the technically labour, and the politically national, issues will have to be kept clear. The more effectively this can be achieved the more possible would it be to conduct the unions to good purpose. Employers too, must be required to give fair chance to all variety of trade union formations. It would be unjust if employers should give access to trade unions of any particular political affiliation. Socialist or Communist or any other type of unions, on this principle, cannot be denied entry into any industry or concern. Governments and employers can have no justification to eliminate them on ground merely of ideology. It is only when trade unions act in subversive fashion that action could be taken against them. Maintenance of the "Open Shop" principle is fundamental. Workers or their unions too have no right to exclude workers from industry who do not belong to their unions. They too must respect the principle of "Open Shop" as strictly as they would require that it be observed by the employers and their associations¹. If it is admitted that trade unions are

¹Compare and contrast British Trade Union and Trade Disputes Act of 1927 and 1946 from this aspect

²The Labour-Management Relations Act 1947 of United States of America is informative on this point.

specialised organizations set up to negotiate about labour matters, other issues should not arise. It is not unfair as it may appear, to require employers to recognize trade unions that are Socialist and Communist in their political ideology. Nor is it unjust to demand of workers to accept as fellow-workers those who are adherents to political allegiances different to their own. If this principle is not accepted and employers are permitted to offer recognition on a "Closed Shop" basis, it will in the long run prove a source of weakness to the growth of a strong and independent Labour movement. Equally, the principle of individual freedom would be violated if trade unions compel workers to join exclusive unions only. The power of organised labour is a vital force in the body politic. It should be checked from exercising monopoly rights over labour. Monopoly in industry is detrimental to public good unless appropriately checked. So with Labour. Labour coercion will be injurious to the community if not duly safe-guarded. Labour history of the different countries of the world provides instructive reading on the consequences of adopting the "Closed Shop" system.

It follows that distinction of caste, colour, creed or sex would be obnoxious to the concept of trade union organization under the "Open Shop" principle. It is possible, and even probable that under specific situations and traditional circumstances, exclusive trade unions may be formed and even permitted. But upon the whole, such exclusive trade unions on a caste or colour basis must not be tolerated more than as a transitional make-shift arrangement. Due to rationalization and application of modern technique in production, workers would progressively depend for their admitances and retention not upon their colour or caste, or even on their sex, but upon their capacity to discharge their function in industry. The tendency of owners to favour men of their own region or religion is natural. But avenues of employment cannot for that reason be blocked to other competent men. The State and the Labour movement must see that such restrictions do not crystalize into impediments to employment. The general rule should be that there should be no kind of limitation in the membership of trade unions based upon these demarcations. A worker is an operator, skilled

or unskilled, and his place in industry must be determined according to his training and functional capacity. The spirit of democracy cannot support any other view of the matter.

Leadership. It has been noted the world over that the labour movement in the early stages of its growth and in the formative period of trade unionism, has been pioneered not so much by workers themselves as by men and women of other social classes. These persons have been fired by a genuine sense of social justice. They have been eager to help the oppressed and the underprivileged. But for the selfless service and devotion of these men and women, there is little doubt that trade union evolution would have been retarded in its expansion and acquisition of strength. Leadership came in the main from the non-working classes. It could hardly have been otherwise. But as general education and enlightenment spread, and workers became conscious of their own worth, leadership began to be provided by the working class itself. The demand of the employers that leaders themselves should be genuine workers is not unsound. Non-worker leaders are often ignorant of the operational points of difficulties involved in a trade dispute and may unconsciously, or even deliberately, introduce issues that are strictly not trade matters. Indeed, often, purely industrial issues are linked up with political questions so as to gain public support. Such disputes and strikes on the whole, do little to further the cause of Labour. Under a foreign political domination such tactics may pay. But under conditions of normal national sovereignty and democratic government, such procedure would prove not too fruitful. Therefore non-worker leadership is not always desirable. Non-worker leaders have rendered memorable services to the cause of the workers. The part that they have played can never be forgotten. But their day in this role is now done. The responsibility should be handed on to others. They can however yet take valuable part in the furtherance of the cause of Labour as adviser and research workers. On the other hand, due to infant or weak growth of trade unionism, it is not infrequent that employers have resorted to all manner of practices to dominate and suppress worker-leaders. All types of victimization, direct or indirect, have been practised in this and other countries to browbeat them. All variety of temptations have been offered to break them away from the rank and file. But

by grim determination and much honesty of purpose, worker-leaders have made their imperishable contribution in the formation of the trade union movement. Ultimately, there is no question that trade union leadership must come into the hands of the workers themselves. The history of the Labour movement in general and of British labour in particular has followed this course of development. There is no reason to doubt that history will fail to repeat itself in this instance in the evolution of the Labour movement in India. If Management show reasonable attitude of regard and accommodation, much friction and strife would be eliminated. Good and earnest-minded employers, have set honourable lead in this direction. Worker-leaders should understand technical obstacles better than non-worker leaders, and would thus be more ready to meet the situation on some basis of equitable compromise. On the other hand, there is equally little doubt that when strikes would break out, they would tend to be more severe and prolonged. Worker-Leaders would not be able to grasp the social and political implications involved as readily as Non-worker Leaders. Due, inevitably, to their confined experience and view of life, they would be less able to appreciate the larger problems that would arise in the body politic than Non-Worker Leaders. If unions function democratically it is expected that the selection of worker-leaders would evolve itself automatically. Men and women of ability and integrity would be available in good supply. In the process of industrial struggle they would develop leadership and thus come to the fore. They would be able to give guidance not only in matters relating to labour but also to problems concerning the nation as a whole. In the solution of national and international problems leadership of the highest order is required. It will be the privilege of the working classes to meet this need.

Functions. Through the methods of collective bargaining, it would be a function of the trade unions to discuss with Management and determine various problems that arise in the matter of Labour arrangement. The first amongst these is the question of wages. The wage received is, after all, the main means of livelihood of the worker. Exploitation of labour is perpetrated mostly through the channel of the rate of remuneration. In isolation, in lack of knowledge, in absence of resources, in face of keen competition, the single worker has

little bargaining strength to pit against the employer. Except in peculiar and abnormal circumstances, the employer can always beat down the employee and dictate the rates of wages and conditions of employment. Ruthless exploitation has thus taken place. This has been particularly so in the employment of unskilled women and children. But in collective bargaining, with greater unity, increasing knowledge, and ability to withhold labour, the scales have been made even, if not reversed in favour of trade unions. Rate fixation whether on time or piece basis, is no easy task. In the modern ways of production wages fixation has become a highly technical and specialised function. The dexterity, the skill, the exertion, the time and the responsibility involved in the job are all matters and aspects that must be carefully reckoned in wage determination. The comparative demand in the labour market, generally, or in a given locality or region, or particular industry, has also to be taken into account. On the other hand, the human need factor too has to be kept in mind. It is especially necessary to do so in respect of low or depressed groups of occupations. Customary or traditional wages payment are of help in so far as they prevent the fall of the wage-rate below a given level. On the other hand, they produce rigidity, and make it difficult for the elevation of the wage rate in these occupations. Fixity imparts security but impairs elasticity, in the wage-rate. Just award to labour is essential for efficient production. This requisite condition must be satisfied. As long as the wage-rate fails to achieve this condition the promotion of production will be retarded. This cannot be achieved without the collaboration of organized labour. It is for this reason that the support of the workers' organizations can be especially enlisted for the fixation of the wage-rate.

Conditions other than wage determination. Apart from the wages problem, there are other aspects of employment that are no less vital. These require careful adjustment. For instance, matter of hours of work, conditions of work, provision of health and safety measures are of supreme concern to labour. Welfare amenities and other requisites conditions are also of importance. These must be provided so as to meet modern requirements. Many of these arrangements will depend upon the nature and character of industries concerned.

Technical complications and difficulties of that nature will have to be duly studied. Financial costs will have to be calculated and arranged to be met. Certain basic contrivances of safety, health and toilet conveniences for workers would have to be constructed into the design and layout of the various industrial establishments, mines, transport industries and the like. It is to meet and satisfy such requirements that special sections have been incorporated into the British Factories Act of 1937 and our own Factories Act of 1948. Indeed, the universal tendency is that due attention be paid to these requisites even in small scales and cottage industries as well. Much exploitation of labour prevails in such establishments. Sub-standard conditions are almost universal in these types of industries. In fact, if the truth be mentioned, small scales industries, and cottage industries in particular, are not institutions of such perfection as some schools of thought would have us believe. On the contrary, some of the worst examples of unsatisfactory conditions of work are met with in this sector of industry. In the arrangement of all these matters it is desirable that labour itself be consulted. While workers may not be qualified to tender advice upon all matters, they would in all cases be able to reflect labour reaction. It would be a powerful means of securing workers' understanding. It would lead to their active co-operation in the helpful conduct of industry. Hence the importance of Works Committees. The older order of Managerial dictatorship is fast passing away. Intelligent collaboration is the new way. It will tone up the will to produce and enforce the sense of discipline if workers' collaboration is sought and gained.

Extra Mural Matters. In extra mural matters like housing, civic amenities and other services, for example educational, health, cultural and recreational, it would be more appropriate if workers participated in these as citizens rather than as workers. Rights of citizenship should be accorded to them with no less freedom than they are to other members of the community. In so far as workers constitute a group problem, in relation to general civic matters, they could form a special constituency. But it is necessary for the development of the civic sense of the people as a whole, as also for the workers themselves, that their segregation should be avoided. These extra

mural services are the right of the citizen, irrespective of his functional position in society. Workers, however, should for such purposes be accorded representation upon different civic institutions and organisations as for example, educational, medical and other bodies. Effective labour representation should yield satisfactory results. Trade Unions could help much in these directions. They require reorientation in the assistance that they can render to society in these matters. The notion that Labour is there to take and not to give is outmoded. The social structure is rapidly undergoing transformation. Much valuable contribution is expected of Labour in civic matters. Trade union questions directly appertaining to industry as such, should be confined and discussed exclusively from the technical point of view. Other issues should be kept out of these trade problems. Though life is one indeed, yet functions are dissimilar. It is therefore but rational that specialized associations should be instituted for these respective purposes.

Trade Union Finances. One aspect of trade union affairs is of great importance. This is the matter of trade union finances. It is held by some competent authorities that trade unions that are financially weak cannot be functionally strong. Broadly speaking this observation is correct. But it does not mean that unions of the low-income categories of workers cannot be serviceable. It is not universally necessary that trade unions should be rich to render help to their cause. French trade unions are example in point. Financially they are not so well off as workers' organizations in other countries. Yet they are effective in protecting the rights of the working class. As trade unions aiming to provide security of standard of living French unions may not have much of importance to their credit. But as fighting units they have record second to none. Unity, discipline and leadership are elements that count more than merely financial strength in these organisations. It must also be borne in mind that modern governments are socialised in their services if not in their intentions. Governments are endeavouring to meet several of the needs that trade unions attempted to supply in olden days. Many types of social assistance or social insurance schemes have come into existence. They confer much security upon the workers and

their families¹. Resources by trade unions are therefore not needed to the same extent as in the past. Sickness, unemployment, old age, funeral, widow and orphan benefits are not now so necessary as they were in the days before social security schemes were adopted by Government as a part of their basic civic responsibility. State social security services provide these in one shape or another. Financially weak unions may not thereby prove ineffective functionally. The main purpose for which the trade unions would require funds would be to meet organizational, legal and other administrative expenses. The heaviest item of expenditure would be to meet strike benefit pay. Strike funds would have to be built up. Such payment would constitute the largest drain upon trade union resources. The building up of the financial resources of the unions is, therefore, important. To this end adequate levy or subscription is imposed. The regularity of payment of subscriptions is even more important than the actual rate. Overdue subscriptions are the potent cause of the financial weakness of many unions. Regular and systematic payment would add much to the financial strength of even low-rated trade union organizations. Nevertheless, prolonged strikes have been fought in labour history not merely on the basis of financial capacity but on the strength and merit of the principles involved. In our own country return to the village is possible in times of industrial warfare². The inordinate duration of certain strikes beyond the means of the unions have been possible because of this line of escape available. Labour leaders have not been reluctant to use this means as their tactics in industrial warfare. Still financial strength, and careful and honest employment of funds are matters of supreme importance. Sound account-keeping and auditing must be provided. Arrangement for systematic check-up must be competently organised. Registered Trade Unions in our country can secure the benefit of highly trained Government audit service free of charge³. Inspection and sifting of expenditure and scrutiny of investments are highly desirable. Misappropriation and embezzlement of trade union funds must be prevented. Such occurrences

1 'The Pillars of Social Security' by Sir William Beveridge 1943

2 Report of the Royal Commission on Labour in India, 1931

3 India Trade Union Act 1926 and 1947

sap the confidence of the public in general and the workers in particular. Achievement of financial integrity is an objective that must be maintained. It adds to the stature and power of the unions.

Works Committee. To reconcile Management-Labour conflict the most important step that has been taken has been the creation of Works Committees. Representatives of Labour and Management constitute these Committees in equal numbers. Matters of dispute and other problems are brought forward for consideration. A great many problems which in the earlier days would have resulted in a break-down in negotiations and in open conflict are now amicably settled and accepted through the agency of the Works Committees. This achievement has not of course taken place suddenly. A long and bitter struggle has gradually yielded this result. The technique of the Committee process itself has undergone change. In the early days, matters were brought for the consideration of the Committees when strikes had actually arisen or were imminent. The new practice is to meet regularly whether there is apprehension of a dispute or not. Various problems are examined as matter of routine. In previous times it was the practice to take up for mutual deliberation question of wages mostly. Other subjects connected with the conduct of industry were eschewed from joint consideration. The present tendency, however, is to enlarge the scope of subjects covered. Progress in this direction, it must be averred, has not been uniform or universal. It will take time to crystalize into an acceptable tradition. Management and Labour have yet to form the habit of mutual toleration and understanding. It is habit of mind which can develop only by practice. Matters of technique, processes of production, economy of material enhancement of quality, enlargement of quantity, consideration of problem of finance, questions of sales and purchase, commissions and other matters will gradually have to be considered in joint-manner. Experience and creation of mutual confidence will slowly yield these results. Much goodwill can thus be engendered. Labour cannot be expected, however, to give advice of equal value on all matters.

The right to strike. Since it cannot be expected that all

matters and points of view will be accommodated in these Committees, legislation has been evolved over the years that has brought into being machinery for the promotion of industrial peace. Conciliation Committees, Arbitration Boards and Industrial Courts have been constituted to this end. These have rendered valuable work. Heavy loss both to Labour and Management has thus been mitigated. More positive than that has been the creation of the tendency towards the promotion of industrial peace. Possibilities of bringing about greater social harmony between the classes and the masses has thus been encouraged. But facts have to be faced. The reality must be admitted. All manner of industrial dispute and contentions, points of friction and misunderstanding will arise between workers and Management. Many irreconcilable issues will emerge. Open conflict will thus become inevitable. Matters of prestige, as distinct from point of industrial friction will come into play on either side. Settlement will be made difficult. Trial of strength will be demanded. This appears to be inevitable for some time to come. The decision of a strike or a lock-out is essentially an appeal to force. But where reasons fail brute force intervenes. Man is a rational animal. But it is often forgotten that he has the brute in him as well. The brute breaks out every now and then. Such a contingency has to be met. In a free country the right to strike and lock-out must be preserved. Essential freedom otherwise would be lost. Except in totalitarian economy such freedom would not be granted. In times of national emergencies only would it be necessary to curtail such freedom. Industrial disputes in such situations must be subordinated to conditions of national safety. Otherwise, the Right to Strike and Lock-Out must be enjoyed in normal times. After all means, private and public, through the channels of conciliation and arbitration machinery have been exhausted and failed, right to open industrial warfare should not be denied. The conduct of such strife must however remain within limits prescribed by law. Industrial disputes should not become the occasion of civil or class warfare. They should not be the way to political insurrection. Industrial disputes should not develop into a political conflict endangering the integrity and sovereignty of the State and affording an opportunity to foreign political control. Political issues must be fought out in constitutional manner. In respect of public utility and essential

services, convention should be formed to keep them intact even during periods of industrial struggle. Public safety and public health should not be endangered. Loss or destruction of plant, and other material equipment must be regarded as anti-national action. The safety of the installation and parts thereof must be preserved. Safety men and key men must be allowed to perform their routine services without let or hindrance. Trade Unions should build up such tradition. In several countries such conduct is observed with rigid strictness.

The Ballot Box. One essential procedure must be preserved. Strikes and lock-outs are costly propositions. Not only workers lose in wages, and in the depletion of their Strike Fund, but they also suffer other privations. Employers too suffer heavily. Their income ceases. Their costs remain. Frequently in the terms of the settlement of a strike itself, employers are called upon to pay wages for the period of the strike as well. Besides such loss, it is not impossible that employers may sustain loss of market both in the home country and abroad. If strikes are frequent, the certainty of forfeiting foreign orders is great. Such curtailment of orders would lead to restriction of out-put. This would ultimately recoil upon the volume of employment. Its incidence would fall upon the workers themselves, to their own disadvantage. It has also to be remembered that the inconvenience and indirect loss caused to the public in general would not be small in most cases of strikes. If the strike should take place in a public utility industry like the railways, or a key industry like coal mining, the inconvenience and loss caused to the public would be considerable. The State too would stand to lose through fall in income-tax and other sources of revenue. The harm done to the tone and temper of the community would not be easily calculable.

It is, therefore, of paramount importance that Strikes and Lock-outs should be the last possible recourse to settle disputes. In such an event, one essential requisite must be safe-guarded, at all costs namely the secrecy of the Ballot Box. In the determination of the choice of the mass of the workers, for or against the strike, the channel of the Ballot Box alone must be utilized. The much vaunted device of pure democracy, of decisions

taken by show of hands in open forum, is neither feasible nor desirable in these days of mass participation by peoples. The "show of hand" process is not such an independent procedure as some political scientists would have us hold. Personal dominance, sectional pressure, power politics, and like forces enter violently into the rough-and-tumble of these struggles. The average worker, therefore, requires guarantee of security in the exercise of his voting powers. It is vital for free decision that the Ballot Box should be employed. The points of dispute must be clearly indicated and widely circulated. Reasonable time must be accorded for the study and examination of the merits of the issues involved. Trade unions, Labour movements, and democracies that impair the inviolability of the Ballot Box, would as surely come to grief as darkness follows the setting sun. It is in this manner alone that the will of the rank and file will be expressed. This is the safest road that trade unionists can follow. To strengthen and to secure the loyalty of the members there is no other way freer from corruption and intimidation.

International Contacts. Due to the growing integration of the economic affairs of the nations, international contacts are important. Much constructive work and ameliorative action can be taken and supported through international labour collaboration. Such international co-operation would ultimately benefit the working classes of each respective country. More of such co-ordination is required. The International Labour Office, its Secretariat and Conferences, as well as other international trade union organizations, have already accomplished much in this direction. It is vital that the attitude of Labour remains international. If the conflicts of the world are at all to be resolved reasonably and peacefully in the future, Labour must take a big share in it. But all such collaboration must maintain loyalty to the nation. This is no easy condition to fulfil. National policies may often be at variance with codes of international justice. Political issues arising out of such deliberations must be referred to competent national authorities or world organizations for further examination and decision.

CHAPTER XXVI

MINIMUM WAGE

Problems of Wage Determination. The problem of wage determination is of prime importance in any economy. In primitive communities, as indeed in modern communism, men were given their portion of the communal income according to certain basic principles. The portion given was either according to the work performed, or determined by the status occupied by the recipient in the social hierarchy. Thus the Human Need factor on the one hand, and the value of service rendered on the other, were the main principles on which systems of remuneration have been based from times immemorial. Tradition and custom have had much to do with the manner and the methods of the payment of wages. Customary payment imparts security. If the payment is in kind, which was predominantly the case in all rural areas, it conferred stability of the standard of living. A good part of the wages were calculated and paid in terms of grain and other essentials of life. Fluctuations in the price structure or other disturbances in the matter of supply and demand did not affect these customary standards of wages payment. Thus substantial stability was secured in these traditional methods of remuneration*. But it also hindered development. In any cost-price relationship, no alteration in rates of remuneration were possible. Incentive was absent. In such an economy each group remains fixed to the sector to which it belonged. Economic life remained static. To safeguard standard of living, and simultaneously to provide for betterment, both stability and flexibility is required in systems of remuneration. The problem is of extreme difficulty. In some regards it is the central question of economic disputation.

Ruthless competition. With the advent of the Industrial Revolution and the breakdown of tradition, men, women and even children were left free, without let or hinderance, to seek their own economic level. In a capitalistic, compe-

*'Rural Wages in the United Provinces' by S. C. Chaturvedi 1947.

titive economy they had to discover their own niche. The force of tradition gave them no protection. Due to a variety of reasons, engendered by Agrarian and the Industrial Revolution, as in Great Britain supply of labour was so excessive that the average wage rate was barely sufficient to keep body and soul together. Indeed, to worsen conditions, women and children came into direct competition with adult male workers. Displaced from their traditional occupations, skilled craftsmen and adult artisans were rendered useless due to the introduction of new processes, machinery and implements of production¹. Women and children indeed proved more suitable to the manipulation of the newly installed machinery than men. Such dislocation caused vast unemployment. Exploitation was rife, and misery wide-spread. Workers laboured for a pittance. Hours of work even for children were seldom less than twelve to sixteen a day. The same tendency in the dislodgement of old time craftsmen in their respective occupations has been experienced in colonial and backward parts of the world. Dominated economically, if not also politically, the powerful industrialized metropolitan countries of the world flooded the colonial markets with their manufactured goods and suppressed the indigenous artisans in their ways of livelihood. The internal economies of these countries were disrupted completely. Indeed in these countries, unlike the countries of the West, no new industries or trades or professions arose to replace the old. The entire population was thus thrown back upon land for their maintenance². Disastrous consequences ensued. The terms and conditions of employment of the working classes deteriorated gravely. No lower limits were known or prescribed³. Malthusian principles of population asserted themselves. Mortality rates both amongst infants and adults rose high. Wastage of life was immense. It was only when labour secured the right of collective bargaining, and developed well organized and well disciplined trade unions that the terms of employment and wages rate showed signs of betterment.

¹'The Growth of English Industry and Commerce,' by W. Cunningham.

²'Poverty and Unbritish Rule in India' Dada bhai Naoroji.

³'The English Statute of Labourers, 1549 and Statutes of Apprentices 1562, were abrogated.

State Intervention. With passage of times public sentiment and the ideals of social justice began to assert themselves. It began to be realized that due to the particular structure of the organization of industry and its financial integration, the working classes could not achieve much for themselves. It was realized that this applied with special truth to the under-paid and the under-privileged classes. It was thought that in spite of trade unions, the State, as representing the community, should intervene, so that social justice for the workers could be secured. The State was to see that workers, and particularly those in unorganized trades were assisted in the matter of bargaining about their terms of wages and conditions of the employment. It was thus that the matter of minimum wages arose. The objective is to give a rate of wage that would enable the worker to secure an income more or less sufficient to keep himself and family in way of life customary to the working classes. The process began in slow manner with a few selected trades. This procedure was gradually adopted in certain countries of the world.

The "Iron Law" of wages. The essential fact to remember is that in the competitive system the worker is assumed to secure a wage rate up to the value of the work that he performs. He can receive this reward either in terms of goods or money. This wage rate itself is determined by the forces of supply and demand operating, with intelligence and with freedom, within a given set of conditions, limited by space and time. All the forces on the side of demand and those on the side of supply, are assumed to have had necessary play in finally stabilizing at a given wage rate. This is said to be point of permanent stable equilibrium. Any deviations from it, either above or below, would be corrected by forces acting freely on the side of supply and demand. This is the point of marginal worthwhileness for the employer to engage a given number and quality of workers at that rate. In other words, it is the marginal productivity of labour that determines the rate of remuneration. Theoretically, this analysis is rational and a satisfactory explanation of wages determination. But in the real world there are several obstacles that prevent the actual consummation of these tendencies. Lack of knowledge, lack of mobility, either vertical or horizontal, lack of financial resources, lack of ability to negotiate with skill, may cause

labour to be exploited. Much of the wages rate prevalent would be so classified. It implies that wages given to labour are below the marginal productivity rate. Employers secure by their superior bargaining strength, undue advantages over labour, and thus obtain an undue share of the surplus over costs. This is exploitation. Both theoretically and realistically, such determination of the wage rate is unwarranted and unjust. But, normally, we have to assume that the marginal rate is fixed correctly and awarded honestly. That in fact the worker is obtaining in terms of his wages return that measures the worth of his contribution to out-put organized upon a given scale. That any interference with it would disturb the arrangement of other factors of production and thus throw the economic process out of gear. Such *laissez-faire* policy was argued with much logic and power. It was generally accepted as sound. Several wage theories were propounded and developed on this fundamental assumption.¹ The general trend of the argument was that the wage rate, of any given category of labour, could not be altered, except at the risk of upsetting the whole process of production and distribution. It was held that such interference would, ultimately, in the long period, fall on labour itself. Workers who would fall below the marginal productivity rate would be discharged. It was no concern of the employers if the wage rate was below subsistence level. They could only regret it, but could not redress it. Dismissal was the only way open to them to follow. It was assumed that the employers themselves were in the grip of competition as the workers themselves. Those that supplied a service of a commodity above marginal cost in the market would be eliminated by force of competition as the inefficient workers themselves. This was the Iron Law of wages. It declared that workers could only obtain that return which was contributed at the margin of permanent equilibrium. It was of little concern whether this rate provided sufficient means for the livelihood of the individual person or his family to subsist upon.

¹The 'Theory of wages'. J. R. Hicks.

It was assumed that the employers themselves were in the grip of competition as the workers themselves. Those that supplied a service or a commodity above marginal cost in the market would be eliminated by force of competition as the inefficient workers themselves.

Cessation of Exploitation. The growing appreciation of the ends of economic endeavour, and the concern for the welfare of the masses gained precision in public sentiment and demanded redress. Public policy began to be shaped more pronouncedly to this end. It was with this purpose that State intervention began to extend itself into the economic sphere. In most countries such interference has come in slow and piece-meal manner. The immediate objective was to satisfy the basic needs of certain sections of the working class. In most cases it commenced with assisting the lower paid categories of workers. Action in these instances must be regarded as prevention of exploitation. If the wage rate fixed was such as to prevent exploitation, it would cause no adverse consequence. Indeed, it would meet the ends of justice. It would give to the exploited their correct and rightful reward. Over a large area of labour employment whether in urban or rural areas, it requires to be reiterated that the wage given, either in cash or kind, is of this exploited character. Frequently custom, caste and colour prejudice to strengthen such process of exploitation. Over large areas of the world, as also in many regions in our own country, differentials in wages paid for identical work persists in this unfair manner. State interference in such instances is wholly justified. No injury would be inflicted upon the national dividend by such State intervention. Any improvement in the terms of employment of such categories of workers would be beneficial. It would add directly to their strength and energy, and at the same time promote efficiency, and thus prove beneficial to the community at large. At the lower income levels of social stratification, any increase in wages is usually applied in the consumption of more and better quality food. This promotes health and vigour especially of the young and the adolescent. Better education and training also follow. So the correction of exploited wages is justifiable action in every respect.

Raising of the Wage Level. The situation however, where the marginal wage is also the actual wage, and not an exploited rate, and is below the subsistence level, the process of enhancement would be a difficult matter. The raising of such a wage rate would not be free from reactions unfavourable to the maintenance of the process of production. Such a position may come about by changes in the technique of

production or due to foreign competition, or to a change in market demand or to an over supply of labour of that particular quality or any other cause. The marginal wage rate may drop due to these causes. Or it may have been at that point from the commencement. It may be, theoretically and actually, at the point of permanent stable equilibrium. Interference with it would dislocate the trend of the wage rate as a whole. In so far as improvement in the wage rate would add to the efficiency of the worker, it would justify its enhancement from the old. It would automatically imply that workers below the required level of efficiency would be discharged. They would add to the army of the unemployed. In certain countries, therefore, this problem of the fixation of the minimum wage rate is met with some flexibility. Wages are raised not to the limit that would give an adequate living wage, but would accord such a wage as would, within reason, be borne by the particular industry in question. "What the trade will bear" principle is followed in such wages regulation. It must be indicated that some measure of such adjustment, within limits, is not impossible. The "squeezability" of other factors is not an impracticable proposition. In text book analysis such margins of course are not possible. But in the actual market certain amount of play in the wage rate, specially of the low income categories, is possible, provided the aggregate wage bill remains within a certain percentage of the total cost of production. If the trade, however, is a dying one supply of labour to and from it, would have to be deflected into other and more profitable avenues of employment. The entry of the young and the adolescent, and the exit of the adults, would have to be planned and organized through the Labour Exchanges, in order to meet the depressed situation in these occupations. This is an important and responsible work that Labour Exchanges must discharge continuously, in the dynamic character of the economic situation of modern communities. This would in all probability be a long time process. Nevertheless, depression and transition in industry must be anticipated and wisely planned against. If the decline in any given industry is caused by foreign competition, control of the situation will depend on a variety of circumstances. If wage depression in the home industry is occasioned by the superior efficiency of the foreign producer, other things being equal, it would not

be reasonable to exclude such goods from the national market in order to bolster up the indigenous industry. Premium must not thus be granted to inefficient conduct of industry. If the industry in question happens to be an essential one, or one which employs large number of workers, it would be expedient either to grant the industry protection, after due enquiry, or to subsidize it to enable it to pay the adequate wage determined by the State. But in other cases, such process of public assistance cannot be continued for an indefinite period. Management will have to discover means to raise the level of efficiency or gradually go out of business. In regard to backward or underdeveloped nations, this argument would have to be applied with considerable caution. Sufficient time will have to be granted to allow them to come up to the level of the more advanced industrial nations of the world. Special trade treaties would have to be formulated to give these countries adequate protection. The International Trade Charter, bringing into existence the International Trade Organization, has regarded such provision as fundamental in the world economy of today. The wage level therefore in such countries can be enhanced gradually. With the promotion of industrial skill and technological improvement, the backward nations in due course, would come up to the international level determined Regionwise, by competent international authority. Other countries, would, however, have to be protected against imports from the low-wage areas, should the eventuality arise.

Minimum Real Wages. Apart from industries of various degrees of efficiency, in the establishment of the minimum wage, local and regional circumstances would have to be taken into consideration. A minimum wage however is fixed mainly for the purpose of the establishment of a given standard of living in the community. The basic wage would have to be determined in terms of real commodities. To this end family budget enquiries would have to be conducted. The actual condition of working class standards would have to be investigated. After due consideration of group or regional habits, and other relevant circumstances, norms for the working class living would have to be determined. Nutritional standards, and other essential needs, would have to be formulated. The national pattern of living in terms of real wages would

have to be worked out and fixed. Rural and urban differences would have to be considered and duly adjusted. The principle of Human Need standard would have to be met. The differences between various economic regions and urban centres amongst themselves would have to be allowed for in such calculations. Differentials, provincial and functional would require to be analysed. These would have to be incorporated in the formulation of the basic national minimum. It is possible that the fixation of the national minimum may not be attainable at once. But a programme would have to be evolved to fulfil the main objective by stages. Indeed, it will have to be borne in mind that the basic minimum in itself will have to be examined at periodical intervals, to make the allowances for change in peoples' habits and ways of living. A progressive point of view would have to be maintained. While consumption habits are known to be customary, traditional and unchangeable, they are not impervious to new influences. Working class pattern of consumption are known to change. Close observation has confirmed the view that transformation in food habits and other items of consumption of the working classes is undergoing rapid alteration. Due to various influences, educational, social and the like, such a change is manifest. Therefore, a revision of the determination of the basic wage would be required at stated intervals of years. It has to be reiterated that a national minimum wage is contemplated not so much in terms of money, as in terms of real wages, according to some agreed norm. Regional and local differences would have to be accommodated into this calculation.¹

Cost of Living Index Number. In order to subserve this end, it would be requisite that a well constructed cost of living index number service were maintained. It must be of such scientific merit as would command the confidence of all the parties concerned. Workers, employers and the general public must have implicit faith in the competency and integrity of such a service. It must be technically accurate and impartially serviced. Adjustments to the fluctuations in the cost of living must be predetermined by a mutually agreed sliding scale arrangement. This should operate

¹First Report of the U. P. Labour Enquiry Committee, 1946-48, Vol. I Part I.

automatically between given points. If fluctuations are more violent than the normal, and rise and fall beyond an upper or a lower point, new adjustment would have to be agreed upon. For this purpose Dear Food Allowance would have to be formulated to meet the demands of the situation. For different regions, localities and cities separate cost of living index numbers series would have to be constructed and maintained. A common base period, if feasible, should be adopted. Weightage should be accorded to the items computed in the various services that are to be maintained for the publication of the cost of living index numbers.

Machinery for Adjustment. It will be necessary that representative machinery be instituted to make negotiations possible between Management and Labour. Such collaboration should be on a systematic and routine principle. Where workers' organizations do not exist, it would be desirable to bring them into being, if necessary, with the assistance of the State. Security of a living wage and peaceful method of obtaining it demand that autonomous workers, organisations should exist to make such negotiations possible. Peace in industry, especially those that are subject to severe competition, require that the process of production be interrupted as infrequently as possible. Strikes and lock-outs should be eschewed. *Ad hoc* bodies created to meet situations of industrial strife though useful, cannot take the place of permanent institutions for the purpose. Management and workers should have machinery, at hand, to meet the situation betimes. Wage problems are, and will remain, the major cause of industrial disputes for some time to come. In backward or a partially advanced industrial countries such disputes about wages will continue to play even a greater part in the disturbance of industrial peace than in more industrially advanced countries of the world. It is therefore, indispensable that adequate machinery should be installed, for the examination and settlement of the problem. Minimum wages fixation would not only help to reduce a good portion of this prime cause of industrial friction, but will help to bring the representatives of labour into active participation with Management in the solving of these difficulties. There would thus grow up an appreciation and an understanding of the difficulties of either side. It would help to produce

a habit and attitude of mind for constructive collaboration. This would be positive gain. It would be of much assistance in the conduct of industry. The possibilities of such mutual consultation can lead to cumulative benefit. It can make possible enhancement in production, and the quality of service rendered in the various industrial establishments of the nation. It does not imply that strikes and lock-outs would be eliminated. It does, however, suggest that a constructive rather than a destructive attitude would have developed, which would be resolved upon the solution of the wages questions. Such a reorientation in mutual regard between Management and Labour cannot but be of advantage to economic and national welfare as a whole.

Minimum the Maximum. It is not necessary to indicate that it is possible that the minimum may become the maximum. This is not beyond the range of possibilities in so far as weakly organized industries are concerned. Industries mainly operated by women, the adolescent or the unskilled are open to such a possibility. But with the strengthening of the trade union organization, it is expected that such eventualities will increasingly diminish. Minimum wage determines only the basic rate for an average output of work in amount and quality, within a given period of time. Workers of greater than average capacity would naturally seek and secure higher payment than the minimum. Employers working with costly machinery, expensive raw material and serving markets of high purchasing power, could not afford to employ labour of different quality. The doctrine of "economy of high wages" is a well understood, and well established practice. Progressive and good class employers act in such manner in almost all countries. They, thus, set a standard for the less fortunate or less progressive minded members of their fraternity to follow. Worker's organizations should, on the other hand, require that for return of fair wages their members gave fair standard of work. The obligation is mutual. Apart from political tactics, and other ideological preoccupations, trade unions must insist on high standard of performance by their members. The strongest trade unions in the world are also those that demand most rigorous standards of work both in output and in quality from their members. It is after all clear to everybody that it is only through the proceeds of industry

that payment can be made in the last analysis . The portion of the enhanced income that will go to each factor in production, will depend ultimately, upon the efficiency of productivity contributed by each at the point of the margin determined by the process of permanent stability. It is held that if workers were satisfied that they have received a square deal in the matter of emoluments and other conditions, the tendency to turn out what is due to the employers will not be weakened. Indeed, if anything, it will be strengthened. This psychology amongst the workers must be strengthened in every possible way.

Sub-Standard Workers. Due to lack of inherent capacity, or inadequate nutrition or indifferent training some persons are incapable of reaching the normal standard of work required. For this inaptitude, inherent or otherwise acquired, these men and women should not be eliminated from industrial employment. Suitable work should be found for such persons. Instead of being a complete liability on the family or upon the community in general, they should be encouraged to maintain themselves by their own exertions as far as possible. Wages for such persons will naturally fall below the minimum wage rate. They would therefore have to depend upon certain forms of social security schemes or social assistance arrangements. These would have to be subsidized either by the State exclusively or partially by employers. The Works Committees would have to be authorized to examine, and to determine the work and rate at which such sub-standard persons could be employed. It would also be necessary that the proportion of such workers to the total workers employed in any given industry, and unit thereof, is regulated by common consent. Sub-standard workers should not for that reason form the major force of employees in any concern or industry.

CHAPTER XXVII

SOCIAL SECURITY

Insecurity Universal. The problem of relief and assistance to involuntary victims of certain exigencies of life is now commanding international attention. The International Labour Organization has done much to awaken interest in this profound social problem¹. It has organised information, formulated schemes and given direction to legislation to inaugurate appropriate measures against these vicissitudes of life. Due to changes in the technique of production par excellence, involving the entire globe, the duration, magnitude and intensity of these economic maladjustments have become the major social problem of all countries. In spite of autarchic and narrowly nationalistic tendencies manifested between the inter-war period, the world has been brought into a single world area for the main staple products of agriculture and industry, due specifically to financial and transportation developments. Disturbances occurring in one remote corner of the world affect the rhythm of the economic process in the others. The magnitude of the dislocation occasioned would depend upon the character of the economic integration existing between the given regions. Apart from these universal and large scale deviations from the normal, specific regional or local oscillations also occur, causing serious and wide spread distress. In consequence, the maintenance of the standards of living, particularly the nature and training of the young and the adolescent, is seriously jeopardised. As for individual distress, especially of the aged, the disabled, the derelict and the unemployable it cannot be easily measured in terms of money alone. Involuntary unemployment is the vital defect, deep-set, within the social structure of modern world society. It is the endeavour of the economists and the statesmen to abolish this fear of Want in every region and from every home throughout the world. Banishment of insecurity of life is the purpose of all sane-minded administrations. Social Security has become the key-note of much current thinking regarding social reconstruction throughout the

¹See, Report International Labour Conference 1944.

world. The development of backward economies and the equitable distribution of the resources of the world are to be so organized that, as far as possible, all manner of disturbances causing involuntary unemployment and deterioration of standards of living of the peoples is protected¹. Indeed, the positive purpose of social security is to stabilise, if not to promote, human standards of life, specially in the ranks of the low income and the sub-human categories of people.

Multifarious Global Causation.—Several of these exigencies of life have been with mankind from the beginning of time. Sickness, child-birth, accidents, invalidity, old age and death have been with man from his very existence. Against these there was familial and tribal provision. The social unit was the matriarchal or patriarchal family. The modern type of natural family, of immediate parents and children, was hardly recognized as a social entity². None-the-less, for all these exigencies, rough and ready provision was available. In fact in some tribes, the cure for the burden of the aged was ceremonial consumption of the elders. To the series of these personal and familial exigencies and other natural calamities caused by famine, flood or pestilence, have now been added others that arise from the modern technological ways of gaining a livelihood. Industrial injury, occupational diseases, and most of all involuntary unemployment, are the modern exigencies that greatly impair the earning capacity of the individual and depress the standard of living of the family. Individual responsibility cannot be ascribed to these happenings in the vast majority of cases. Individual foresight or care can mitigate to some extent the baneful consequences of these occurrences. But essentially, little difference can be made to the happenings of these economic tendencies by merely individual foresight. The causes of these calamities is far beyond the control of the individual or the family. Hence care and provision against these visitations must be made by society as a whole. The individual can no more fight these occurrences than he can fight the occurrences of a famine. Technological unemployment induced by the introduction,

¹See 'Charter of international Trade Organization.' 1948.

²The Individual counted as naught in the social values of those remote days.

say, of a new tool or the discovery of a new process or the utilization of a new material would displace old implements, old methods and old commodities and in consequence throw out of employment masses of workers, artisans or farmers from their former occupations³. Such a change in the industrial structure may occur from within, as in England, or it may be brought about and imposed from without as in India. The Industrial and Agrarian Revolution in England in the one case, and foreign competition and political domination as in India in other, are the typical instances of how national and international dislocations take place. Scientific discoveries and inventions also must inevitably produce such results. In the transition period grave dislocations will be caused to the community in general and the working classes in particular. Multifarious causes, natural, social, economic, technological, and financial, engender these upheavals as apart from internal and international political disturbances. Against these cataclysmic happenings isolated individuals, or family groups or even nations are impotent. The pages of the economic history of the nations prove this to be the case. Metropolitan countries and colonial countries alike, experience these large scale occurrences in one manner or another, whether their economies are mainly industrial or predominantly agricultural in structure. Indeed, it has been established beyond doubt that under present day world arrangement, these matters especially the question of unemployment, affect not only one, but engulfs several countries together. Therefore such forces have to be fought collectively by the nations of the world. Indeed in many instances, a single nation would be almost as helpless in fighting these adverse economic forces as a single family or a single individual would be to combat drought. Several organisations and institutions have been set up to this end. The I. L. O. has been a leading example in this particular method of international collaboration. The success of these international bodies will depend much upon the degree of efficiency of the set up of the respective national systems.

Social Security. The frequency, duration and intensity of the visitations are of such magnitude that the family and

³The causes of economic dislocation are more frequently than not global in their origin.

much less the individual, can hardly be expected to provide financial resources against their occurrence. The economic structure of modern society is so evolved that the burden of these happenings cannot be sustained either by the individual or the family. Institutions like the joint family system, or even religious charity, commendable enough in themselves, cannot meet the consequences of modern situations. New evils require new cures. Old ways must give place to new. Hence the inauguration of schemes of social security. These schemes have grown up piece meal. They have emerged to meet different social stresses arising in various countries over the century or so.

National systems of social security can take several forms. It may be given either in the shape of specific public works opened out for instance to combat famine. Experience, careful analysis, study and research have yielded a body of knowledge by the aid of which effective measures can be formulated to help the needy.

Road construction, canal excavation, railway or dock extension or dam erection and other public utility projects can be launched. Such public expenditure, well timed, and of sufficient dimensions, would not only provide gainful occupation to the unemployed, but would also help the stability of a collapsing price level, and thus sustain economic activity. Apart from such public works, the Government may arrange for the grant of subsidies, of one type or another to private enterprise and thus maintain the rhythm of employment. Or the state may subsidise wages or give "doles" or provide food, shelter or medical aid to the unemployed. Refugee problem, though caused mainly by political forces, is a matter requiring resettlement of the up-rooted into the economic system. The duration of such help should continue till assimilation and rehabilitation have been completed. All such aid is known as social assistance. Social assistance is a method of relief which is suitable for conditions of unforeseen or incalculable national or sectional, or even personal, distress. It is also adopted where the victims of distress are of such low income groups that they cannot contribute towards their own aid. The duration and frequency of these exigencies are such as to make difficult the calculation of premiums that

could be levied. In all such cases social assistance is to be preferred to social insurance. The danger of pauperization is indeed inherent in the situation. This must be avoided. To build up a people materially at the cost of their moral fibre would be poor psychology and a disastrous national policy. But there are limits beyond which the principle of self-help cannot proceed. Standards of living cannot be allowed to fall beyond a point where the productive efficiency and health, particularly of the young, the adolescent and the nursing mother are exposed to danger. Where poverty is abysmal, ignorance colossal and unemployment universal, and wherever the will to work is ephemeral, social assistance is the only preventive process that can be applied to individuals at this level. Such sections of the community must be maintained as an inevitable obligation upon the State. They are in the mass, the unfortunate victims of social, historical and economic maladjustments. As soon as they are rehabilitated and enabled to obtain adequate reward for the work they perform, they should be passed on to systems of social security erected for the benefit of the population in general. The curative aspect of social security measures can then begin to have their chance.

Social Assurance.—The other more widespread way of help is through schemes of social assurance. In such a scheme the individual makes a contribution towards the given fund or makes an all-in payment for a coordinated system of help against varying types of accident to which he and the members of his family are exposed. These contributions or premiums are usually of a tripartite nature, the parties being the beneficiaries, the employers and the State. The amount demanded is a percentage of the wages bill of the employer, a given fraction of the wage of the worker, and about a third of the total benefit as a contribution from the State. The total amount paid into the Fund is worked out on an actuarial basis of the specific cost of the exigencies provided against, inclusive of administrative cost. In certain countries, as in Russia, workers do not make any individual contribution. In other countries also like Australia, many social services are now being provided without any payment being levied from the beneficiaries¹. In India, on the other hand, the Government

¹The Pharmaceutical Benefits Act, 1948.

is not contributing by way of money for the social insurance schemes that have been set on foot^a Government aid will be forthcoming no doubt in the supply of medical care at selected hospitals, health clinics, maternity and child-welfare centres and in administrative costs. It is, however, held by the students of the problem that apart from the lowest income categories of the population, contribution should be levied from the beneficiaries. The danger of collusion, malingering and softening of the will to work may otherwise spread in unhealthy manner. The positive effect of the maintenance of self-regard by the process of payment however fractional, is deemed as not inconsequential in these matters Insurance premium from the worker should be levied according to pay. Graduated schemes of contribution are not uncommon

Institutional care. Much of such help is best given institutionally Hospitals, clinics, sanatoria, homes and such like establishments meet the respective needs of men, women and children concerned With specialized staff and facilities institutional help so arranged would be more competent and economical than provision in the homes of the insured Child and maternity treatment, care of the persons permanently invalid, the totally disabled, the decrepit and the aged would be best met by properly equipped and adequately staffed and efficiently administered institutions There should be no reason which should prevent persons on the social assistance list to benefit from these institutions. Indeed the intention is that such specialized institutions should meet the need of the entire population, insured or not As in England under the Beveridge Plan so in India, it is the ultimate aim of Government to meet the national need in this manner

Representative Collaboration. In the matter of administration of these civic services it has been proved that a consolidated, comprehensive organization is more effective than isolated and unconnected methods of provision. A great number of these disabilities are organically connected one with another Ill health, sickness, unemployment, invalidity provision of the widowed and the orphaned, all run one into another in general, though not in specific manner. One

^aEmployees State Insurance Act, 1948

social maladjustment breeds another. So the treatment should be co-related by an all-inclusive organization. The individual, indeed the family, should be treated as a unit for several of these occurrences. From the individual to the family, has been the process of progress of these social security services. The bread winner is still the central figure. But dependents, particularly the young, count greatly for the future. While each specific social service would have its own specialized staff, centre and treatment, whether for maternity, old age or industrial diseases, the administration controlling the entire organization would have to be one. To avoid purely bureaucratic treatment which may become a matter of mere routine, it is vital to secure local contact with those classes of the community which are most affected by these untoward happenings. Old philanthropic organizations, trade unions and the like which have looked after the members of their own locality or community, should be associated with the care of the victims concerned. They have valuable experience at their command. Their personnel are trusted. They carry influence which the mere officials do not often enjoy. They would be in a position to handle many of the delicate problems that arise, with insight and sympathy which are not usually associated with bureaucratic administration. It is essential to carry the human touch for the successful treatment of afflicted men and women. The psychic stuff of man and not merely his physical body needs repair and replenishment. Trade unions and other representative organizations should therefore be associated in the administration of all such services.

Labour Exchanges. In this connection it may be indicated that the institution of Labour Exchanges will prove indispensable. They would form the pivotal unit of the entire organization for social security schemes. Unification of the channel of employment, through the Labour Exchanges, forms an integral part of the programme for the provision of social aid. In the absence of Labour Exchanges adequate and efficient handling of the disbursement of cash or kind benefits to individuals and their families will not be possible. Chaos would ensue. Wastage would abound. Duplication would occur. Inadequate guidance would lead to mis-direction of man-power. Local, regional and national situations, statistical information,

occupational demand and supply position and all forms of other data would be collected, examined and scrutinised in the Labour Exchanges. Intelligent mobility would be organised in matter of placement both vertically and horizontally. Experts would be available to give guidance to employers and employees alike in the solution of their respective difficulties. Labour Exchange authorities would be in a position to indicate the manner of solution of the various problems arising in the matter of industrial and social re-adjustments constantly required in the body economic. Labour Exchanges would also be able to give accurate information in regard to the cases that would apply for assistance in one way or another. The maintenance of records and history-sheets of all insured cases, and other persons seeking employment, through their agency would furnish data on which to base preventive and curative treatment. Labour Exchanges would have to be completely neutral in their attitude either towards employers or workers. All kind of partisanship would have to be eschewed. Efficacy of their services would be jeopardised if they took sides in Labour-Management disputes. Labour Exchanges must seek the advice of representatives both from the rank of employers and workers. If Labour Exchanges are to operate successfully in the Labour market, such functional coordination between employers and workers group would be indispensable. Other experts like psychiatrists, Economists, Educationists, Medical specialists and other public men and women will have to be appointed to give Labour Exchanges effectiveness and dignity. In this respect the composition of the States Insurance Corporation of India has been well conceived and well designed.

International Range. Matters involving social security are of all ranges, extending from the local, through the regional, to the international field. Financial aid would have to be adjusted and balanced as between different administrative units to insure fair division of the burden of relief given. The Centre, the States and the local authorities would, each in their respective spheres, share reasonable portion of the financial cost. Administrative responsibilities too would have to be duly shared and distributed. Actuarial calculations would have to be worked out and periodically revised. Safe and worthwhile investments of various monies and funds

would have to be considered and organized. Security of funds, with yield of income, would have to be simultaneously secured. Central or federal contacts would have to be kept alive. International collaboration would also have to be maintained. For seamen, airmen and other types of personnel, who travel from country to country, reciprocity in accommodation, payment, treatment and other assistance would have to be negotiated and arranged. Comparative study, exchange of experience and research of the methods of different countries, under varying economic circumstances and environment would have to be developed and contacts established. These would widen the horizon and broaden the approach to the solution of these matters. To safeguard the standard of living of vast populations, to maximize the period of gainful employment in well selected occupations, to make bearable the lives of men, women and children who fall involuntary victims to diverse uncontrollable and untoward economic situations, to make happy the concluding days of the aged is the work that calls for ability, energy and integrity of the highest order. It is thus alone that social security can be attained and stabilised.

CHAPTER XXVIII

TOWN PLANNING AND HOUSING

Central Social Problem. It may be said that next to the question of wages and conditions of employment, the problem of Housing is the most vital for the working class people. Indeed, as matters stand in the world generally, and in India particularly, the problem of Housing constitutes the central social problem of our generation. Chronic overcrowding both in rural and urban areas is a common experience¹. For the low income categories of the population the situation is desperate. It may be said that Governments everywhere, as also in the Republic of India, including the State Governments, are keenly alive to the need. Housing Committees have been constituted and the matter is receiving expert consideration. The National Planning Committee in India and the International Labour Organization abroad, have devoted considerable study to this universal problem.

Problem of Antiquity—Aristocratic. The question of Housing or Town Planning is not necessarily a modern problem. It is a subject of great antiquity. In our own country, as apart from China, Egypt, Babylonia, Greece and Rome, the problem has emerged with varying degree of intensity, assuming different aspects at different times. The remains of ancient towns and sites, e.g. Mohenjodaro and the like, are evidence of the constant effort put forth by mankind to house itself with security and adequacy of comfort and elegance. In the past the main concern was to house Kings and Nobles, with due dignity and safety. Housing of the aristocracy was the chief concern of the ancient town planners. The modern problem, on the other hand, is the housing of the common citizen, democratic in concept.

Root of the Question. The root reason for the need of group living lies in the nature of man himself. Had man been differently constituted, probably the problem of town

¹See 'Indian Census Reports' 1921, 1931. Also 'Bombay Rent Enquiry Committee Report', 1936.

planning and housing would never have arisen. But the fundamental fact is that man, by nature, is gregarious. He exists, thrives and develops in association with his fellows. This is a basic fact. The more effectively arrangements for proximity of habitation can be evolved, the more successfully can progress be ensured. This gregarious instinct is embedded in mankind in order to fulfil multifarious functions. In olden days the gregarious propensity in man manifested itself through the channel of the family of matriarchal or patriarchal formation. It then enlarged itself into the clan or the tribe. Subsequently, over the centuries, it spread itself into that of the concept of the nation. Even to this day, such group living, in narrow, familial, castes or creed sections is dominant. Ethnological, or religious affinities still persists in our systems of habitation. These deep-rooted instincts must be respected and given due accommodation. To override them ruthlessly may engender many anti-social reactions. There may obstruct the realisation of the sense of community life as a whole. On the other hand, narrower loyalties should not be permitted to frustrate the fulfilment of the larger promise of the identification of the individual, the family and the communal group with that of the nation at large. Balanced harmony of the different loyalties must be secured. Town-planning must keep these social and group habits in mind.

Defence : the supreme need. The first need that compelled men to seek to abide together in groups, tribes or clans, was for the sake of security of life and property. Ravages of nature, attacks of wild animals, and raids of hostile fellow-men, compelled the formation of compact location of human habitation. This has happened from the dawn of history to present time. Atomic weapons and methods of aerial warfare may cause dispersion of population, but they constitute the same old time problem of effective military defence. Only the new technique of warfare would require change in lay-out, design and structure of modern towns and cities. With heavier concentration of population in industrial centres, and the drive towards industrialisation of the nation, the aspect of security will assume paramount importance in our country. Vulnerability of centres of administration, industrial production and business distribution have to be made

impregnable. Without security, life can only be lived at low level. Insecurity is a hindrance both to material progress and to cultural development.

Functional Motive of Urbanisation. Apart from the fact of safety, towns whether of antiquity, or of mediæval or modern times, are functional in their purpose. This probably is more true in the present age than it has been in the past. In the industrialisation and localisation of towns and cities, functional motivisation has been the principal object. Transportation has helped in this industrial evolution. The highways of mankind have borne him through the ages from primitive existence, with ups and downs, to modern times. Mixed purpose towns have also abounded. Where transport facilities by water, land or air converge, mixed towns grow up. But otherwise, specialised functional factors dominate in the rise of modern towns. The type of the modern town is determined by factors of utility and the economy that it subserves. We have the growth, for instance, of mining towns, metallurgical towns, railway and sea port towns, and manufacturing towns of different types. Similarly, we have commercial, financial and trading centres to serve the peculiar needs of the age. The range of the needs that these towns serve may extend from the immediate neighbourhood through the regional and national, into the international sphere. Topography, situation, climatic and health factors much influence the creation and development of towns. Historical, religious, administrative, educational and other amenities too play their part. But in modern industrialization location and condition of economic purpose play the principal role.

Different Elements for Specific Fixation of Towns. For instance, in a manufacturing town, the matter of cheap power supply, thermal or electrical, abundant water supply, requisite raw material and labour availability, accessibility to commercial, insurance and financial aid, transportation and marketing facilities and the like would be important elements in the localisation of the respective industries and trades of the different types of towns and cities. On the other hand, religious cities or university towns and administrative cities, health resorts and towns for recreation and pleasure would have other considerations to determine their

fixation, in order to fulfil adequately their respective purpose.

Town Planning—Civic Centre and Zoning. The purpose of Town Planning is so to map the lay-out of the town, taking its topography, climatic factors like rain, wind and temperature, and future expansion into due consideration*. The objective is to secure the maximisation of all advantages in movement, construction and cost so as to serve its purpose effectively and economically, retaining health and aesthetic advantages unimpaired. Landscape, rivers, mountains, forests and sea would have to be viewed in detail and as a whole, to maintain organic unity of the town and to serve its chief purpose. The unique or the multiple-purpose town will give the City Designer the key to his planning. He will locate the Civic Centre, the heart of town planning, with due consideration. The Civic Centre, as it were, is the soul of the city¹. For, after all, a city is not a mere collection of houses or a series of factories, shops and offices just as a cathedral is not a mere collection of stones, bricks or mortar that compose it. A true city has its own personality. It should be the end of the Designer to catch the ethos of the people and give it appropriate setting and structural body. In ancient and mediaeval towns this was usually achieved with marked success of craftsmanship and dignity. Cities, epitomised the spirit of the nation. Delhi, Peking, London Paris or Rome symbolized the spirit of these nations respectively in their own individualistic manner and style. In some recent towns and cities such architectural and functional expression have been attained. But modern towns mostly have developed haphazardly. They have grown up in chaotic manner, accentuating inconvenience, illhealth, cost and ugliness. Jerry-building and "ribbon-construction" have emerged in unchecked confusion. They have annihilated the sense of organic oneness that should be present in centres of human habitation. Civic Centres and appropriate Zoning are fundamental to town planning. Approp-

* 'Modern City Planning', by F. Karster or 'The Art of Town Planning' by H. W. Lancaster.

¹It is the central part of the town, actually or figuratively, which symbolizes the common life of the citizens in the institutions, edifices, marks and parks that the life-throb of the people in history and tradition.

priate facilities for movement of men, animals, material and supply services, by the studied lay-out of arterial highways, roadways, crossings, lanes and paths, underground and overhead, and other types of transportation have to be secured and provided. Zones for manufacture, especially of obnoxious industries, of business and trading centres, ware-houses whole-sale and retail markets, educational and residential areas, ornamental paths and watersheets, recreation grounds, lawns and parks, religious places, slaughter houses, refuge dumps, green belts, hospitals, asylums and burning ghats will all have to be woven into the texture of a well planned town. Particular attention will have to be devoted to health and civic services. Purity and abundance of water supply, continuity of sewage and drainage flow and regularity of refuse disposal and treatment would have to be organised. Guarantee of purity of food and drink supplies, especially of milk, ghee, other dairy products, meat, fruit and fresh vegetables, by proper cold storage arrangement and the like would have to be planned. Treatment of the sick and the diseased, the decrepit and the aged, the mentally deranged and the criminal would have to be arranged. The adequate control of the delinquent, the thief and the pick-pocket, of the unemployable of all ages and sexes, would have to be institutionalised and accommodation provided. Police stations, jails, grog shops, gambling dens, brothels, pandering to the depraved cravings of mankind, would also have to be considered. Thus hosts of problems would have to be examined and accommodated, if the city population is to work and live and attain to its intellectual and spiritual height.

The major problem But the major problem would be the problem of the housing of the city population. This constitutes the crux of the problem of city planning. The provision of housing, in the last resort, means the provision of homes for the people. In and around the home the race is nurtured. It is in the home that the child is nourished and developed to its fullness as man and citizen of the nation. The intimate familial needs, physical, psychical, intellectual and artistic must be awakened, trained, satisfied and expressed to make men happy, useful and noble. If homes cannot be so housed, it would mean the ultimate failure of civil-

zation. The task of the town planner is to provide houses in adequate manner so as to make the raising of such homes materially possible. Houses must be so planned and built as to awaken the best in men and meet their deepest needs*. They must, above all, be within their income reach. With varying habits and tastes, with varying aesthetic content, above all, with unequal income, the problem to construct suitable houses, for all descriptions and levels of population, is a problem of the most complex character. The adequate solution of these problems is no facile task. If towns and cities were homogeneous in their function and in the composition of their citizens, matter would not be so difficult to determine and to administer. But when functionally, and much more socially our cities are heterogeneous, the problem of city planning and housing becomes difficult of ideal solution.

The economic angle—democratic. It may, however, be said that the problem, on the whole, must be viewed from the economic angle. Caste, creed and colour should not be allowed to dominate. We know that both at home and abroad these group loyalties wield great influence. But we should not show undue anxiety to placate all such old time demarcations. Crystallisation of these traditions leading to anti-social divisions of civic harmony of the community should be prevented. Old walls of segregation should be gradually demolished. Indeed it is noticeable that such a process is already at work in our modern towns and cities. While the older residential parts of our cities still differentiate between the different communities and castes for purposes of residence, the new areas are parts where people of all communities are beginning to reside together. The common purpose of attaining higher and more convenient style of living is liquidating old-time communal and caste segregation. The old concept of group living will die out giving place to a large, social loyalty. Efficiency and economic capacity to meet rental charges at different wage levels should be comprehended in the provision of houses in the construction of town and cities. Thus, the income category and the functional criterion should be the main guide in the supply of houses for our city populations. For this purpose careful civic surveys should be conducted as has

*The Home (Vol VIII)—the COPEL Series.

been done in several cities already*. When the facts have been collected and ascertained, plans should be worked out. These should be examined from various designal, hygienic and other essential aspects. The financial aspect, however, would have to be the paramount consideration. In most industrial cities, as contrasted with educational, administrative, recreational or health resort types, it will be found that well over two-third of the citizens would be constituted of the low income category groups. They would include the daily unskilled casual workers, the semi-skilled and skilled mechanics and operators and a large bulk of the middle class folk. They are the major elements that compose our city population. It is these who constitute the real problem of housing in our cities. The rich and the upper middle class are neither so numerous nor so economically handicapped as not to be able to house themselves satisfactorily, either within the city or in the suburbs in these days of motor or other mechanical traction. The acute inadequacy of housing provision for the low-income categories of citizens is manifest in most towns and cities. Such indeed is also the case abroad. The first fact to keep in mind is the capacity of the people to meet the rental demand. The position of the proletariat due to this factor is as deplorable as it is dangerous. The modern problem of town planning, basically therefore, is the housing of the masses. It is democratic in purpose. The entire intention of city planning has been revolutionised. Rentals, therefore, must be brought within the paying capacity of the masses. Where tenants of this class have had to meet economic rent, it has seldom meant less than 20% of their monthly income. Indeed if the total payments that they are called upon to make in one shape or another were computed, it would represent a larger proportion of their income. All manner of illegal gratification has had to be furnished by tenants. Overcrowding has surpassed the point of decency of human living. Quality of housing supplied has deteriorated. Amenities of services like latrines, water supply, drainage and the like have fallen short of the low standard at which they already stood. Rent for accommodation suitable for this category of citizens should not exceed 10 per cent of their average

*See Madras Housing Committee Report, 1946

annual wages. Many would argue for a lower rental limit. But, with improvement in wages generally, and equitable grant of Dear Food Allowance and bonuses, and Social Security measures and free services of various types, this class of the citizens should be able to stand this order of rental payment for house accommodation. It also must be recognised that the construction, depreciation and repairs of buildings and the maintenance of services have much increased in cost. Due allowance must be made for these charges to make it worthwhile for persons to invest in house property. In any case, low rents should be the objective of administrative authorities. Free housing does not commend itself to most students of the problem. Special categories of low-paid workers and essential service men, or workers in industries located in regions remote from human habitation, may be given free accommodation, as is done in many parts of the country even to-day. Otherwise free-housing is an unsound policy. Payment of rent would be conducive to self-regard. Amongst other things, rents would be adjusted to the type of accommodation respectively required by the different classes of tenants. To meet the needs of the lowest paid categories, a graded scale of rent could be levied for the different types of houses occupied, provided in no case the rent charged exceeded 10 per cent of the average wages earned. Total earnings should not be computed for this purpose.

Agency for Provision of Housing. In view of the limitation of rentals on the one hand, and increase in the cost of construction and maintenance on the other, it is matter for consideration as to what agency will supply the need for housing. Due to the rise in land values, and the cost of building material like bricks, stone, cement, timber, iron, and structural fittings and labour, it is clear that private contractors and building companies and the like will not invest in house construction for the low-income class of tenants, unless they are permitted to extract full economic rent. Under conditions of scarcity of housing accommodation, it would be necessary to continue with rent Control Acts. Allotment of housing accommodation by Town Controlling Authority should be continued. It is doubtful whether under present cost-price structure, Co-operative Housing Societies could meet the need of this class of tenants. It

would, therefore, appear, that main problem of housing for this section of the community must be met, directly or indirectly, through the agency of the Government, Central or State, operating through local bodies like Municipalities, Corporations or specially constituted Town Improvement Trusts. The Government could help substantially by the raising of long-dated loans, placed at the command of these housing agencies, at low rates of interest. Local patriotism could be enlisted and stimulated to subscribe to such loans. Targets of construction could be fixed over a span of years, giving due weightage to the construction of low-rent houses. Besides financial assistance, Government could help not a little, by arranging for the adequate and regular supply of necessary building and constructional material, not otherwise easily obtainable in the market. Already many commendable plans and schemes have been set on foot to meet the chronic housing shortage of the population in general and of the working classes in particular*. Employers too could be induced to meet the need for housing for their employees. Many do so partially, already. In remote regions or in wasting industries like mining, employers could be required to furnish housing facilities for their workers. But on the whole, it would seem best for several reasons that employers should not be pressed to furnish housing accommodation for their workers. They could, however, be required to make a per capita contribution towards a Building Fund. It also has to be considered that on the whole, workers do not relish living in houses provided by their employers. They do not wish to live under the Management's eye in and off working hours. This psychology of the situation must be appreciated. It may go deeper than we comprehend. It may easily produce all manner of unwholesome anti-social reactions. Also during periods of strikes and lock-outs, the occupation of employers' houses, which right should be secured without condition, create unnecessary complications and embarrassment. It would appear, therefore, that Governments, through the various channels indicated above, should be mainly responsible as the principal agency for the provision of houses for low-income categories of citizens.

*See Housing Committee Reports of the Government of India, Bombay and United Provinces.

Field, however, should be left free for private enterprise to fill the gap of the housing shortage. Workers by themselves, even if bound together in Co-operative Housing Societies, cannot be expected to supply their need in this regard except to an infinitesimal extent. The main difficulty is that Government constructed houses may prove costly. Great vigilance will need to be exercised to achieve economy. If cost be heavy, economic rent would naturally be high, inclusive of recurring costs of repair. Probably in any event, Government would have to subsidise these housing projects by charging a rate below the economic rent. But the economic drain thus imposed upon State revenues would be more than repaid in terms of better health, more efficient work and contentment of the working population in particular. These are advantages that far-sighted statesmanship cannot ignore to reap for the benefit of the community in general and for the administration in particular.

Quality of Housing. The quality of housing is a matter of vital consideration. This is an engineering-cum-health problem. Aesthetic and psychic satisfactions also must be considered. The selection of site for the various categories of the population, with due consideration of economy and expense, in time and money of daily movement from the place of residence to place of work, and back, will have to be carefully studied. Types of buildings, whether tenements, flats, villas, bungalows, cherries, chawls, *ahatas*, garden cities or village *bastis*, will have to be provided according to needs surveyed and determined. The quality of building material used, fittings, furniture, sanitary equipment, culinary and other domestic and toil-saving devices should be prescribed and standardized. The cubic capacity of floor area per capita, the provision of living and general rooms, as also of cooking, storage, bathing and toilet facilities should be made according to prescribed standards with due regard to the social habits of the population.* The provision of community institutions like schools, libraries, public halls, gymnasiums, playing fields, theatres, cinemas, restaurants, dairy depots, shopping centres, clinics, nursery homes, cottage hospitals, bathing and dhobi ghats, vegetable plots, poultry runs, animal sheds would also have to be considered apart

*The Provincial Housing Boards' Five year Plan, 1947.

from religious places, temples, mosques, gurudwaras, churches and cremation grounds. These are some of the basic community functional building demands. These must be provided in modern Town Planning.

Representative Administration. In conclusion, two requisites must be supplied. One is that residents of the houses or colonies should be represented on Boards of Management or Improvement Trusts and like agencies, for administrative purposes. The closer the administration is integrated, with tenants and residents, the more useful it will prove. Frictional, sectional and personal interests and conflicts will have to be reasoned out and settled. "Democracy at the grass roots" should be practised in the matter of housing accommodation and housing administration. Such a process will be conducive to better administration of the colony as well as to its harmonious and cultural development.

Research. The other vital need would be to institute research, at the highest possible level, into the problems of Town Planning and Housing. Such research organisation should have organic contact with Provincial and local housing administrations. Future growth of population, composition in age and sex, direction of expansion of town, economy of construction, efficiency in the supply of civic services, the provision of social amenities, the maintenance of up-to-date methods of coping with the volume and character of movement of population, development of commerce and trade by river, road, railway and airways, problems of security of life and property and the like are essential ingredients in town living and town planning that must be under research examination continuously. Changes in tastes, functions and activities of the population, cultural aspirations and the like should be studied, visualised and provided progressively. Rural as well as urban life should be comprehended in such a survey. If we should fail in looking ahead of the expanding and changing needs of the people, we may drive our populations to despair. Research will, therefore, play a vital role in the smooth and harmonious expansion in the rapid modernisation of our populations. A Master Plan befitting a great people with a unique history for housing will be the programme for research.

CHAPTER XXIX

TRANSPORT

GENERAL

Importance of Transport. The term "transport", used in the collective sense, signifies the means of conveying persons and things from one place to another. Transport plays an important part in civilized life. The march of science and the advance of technology have enabled modern transport to conquer time and space, and to assume a national and an international role. Transport is closely connected with the economic, social, political and defensive organisation of a country. We are only concerned with its economic aspect.

Progress of Transport. Men and women were themselves the earliest means of transport. But with the domestication of certain animals it was natural to transfer the burden on to the backs of some dumb beasts. The oldest pack animal was probably the ass. Later came the ox, the horse, and the camel. In the Middle East, in Persia, Afghanistan, Egypt and Northern India, these animals still continue to be used as means of transport. The shift from the ass to the aeroplane represents the change from primitive to modern times. It is a sufficient index to the advance in social evolution. The ancient civilizations, e.g. of Egypt and Babylon and Greece, were confined within narrow geographical limits for want of quick and far-reaching transport. But the developments in transport have given modern civilization a global sweep. This has had great cultural and economic consequences.

Use of Transport. The economic uses of transport are that it aids Production, Exchange, Distribution and Consumption.

Aid to Production. Transport is a valuable aid to Production the function of which is to create and increase utilities. By moving persons and things from places where they are not wanted to places where they are wanted transport helps to create utility. It increases utility by moving persons and

things from places where they are less wanted to places where they are more wanted. Transport thus produces what is called "place utility".

Transport also aids production by helping in the expansion of industries. The development of any industry depends on two conditions : first , access to raw materials; second, a wide market. The textile industry of Lancashire well illustrates the useful role of transport in large-scale production. Transport gives this industry the needed access to its basic raw material, i.e., cotton, grown in such distant countries as America, Egypt and India. In addition transport creates for that industry an extensive market by carrying its products to various parts of the world and ensuring their steady supply. Transport expands, too, the market for raw materials by assisting in the growth of industries.

Further, transport aids production by facilitating the localisation of industries. Now, industries tend to be concentrated in places where the total transportation charges that enter into the cost of production of an article, are the lowest. The material used for manufacturing an article may be a pure material or a gross material. A pure material is one which does not appreciably lose its weight in the process of manufacture. Cotton, for example, is a pure material. A gross material will lose its weight in the process of manufacture and is therefore known as "weight-losing material." Iron ore, for instance, is a weight-losing material. When an industry has to use weight-losing material there will be considerable saving on transport if the industry is located near the source of the material. Thus all metallurgical industries more or less localise in the vicinity of mines yielding ores or coal.

Transport also helps production of perishable articles by conveying them to consumers in distant places. Industries like fishing, meat packing, poultry farming, dairy farming , fruit farming , in which large numbers of people are engaged in Japan and New Foundland, in the United States and Australia, in Switzerland and Denmark, in California and Tasmania, respectively, flourish on their present scale because of the quick and reliable transport now open to them.

Again, modern transport has opened a large avenue of production for itself. The manufacture of ships, locomotives, automobiles, aeroplanes and other vehicles, and the production of their numerous parts and accessories, are to-day the biggest industries in the world, involving capital and labour to a colossal extent.

Aid to Exchange. Transport is an aid to Exchange. Without it the vast system of international trade would be impossible. New and improved methods of transport invariably lead to increased commerce between countries. When the means of transport were crude and limited trade was but local, and was generally done in weekly markets. With improvements in transport periodical fairs began to be held where goods that came from all over the known world were bought and sold by great wholesale merchants. Science brought about still further developments in transport with the result that international trade, instead of being carried on in seasonal fairs, became a ceaseless activity. Transport enables each country to confine itself to the production of those articles for the manufacture of which it is most suited. This it does by bringing into play the principle of the division of labour in the wide sphere of commerce. If every country were to produce all the commodities it needs there would result either a return to a state of primitiveness in which wants are few and simple or a tremendous degree of expenditure. Transport offers a middle course, and makes it possible for each country to specialise in those commodities which it can produce under the most advantageous circumstances and to exchange them for commodities similarly produced by another country. This is to their mutual benefit.

Aid to Distribution. Transport helps in the distribution of wealth. It generally increases the value of land and, in consequence, raises its rent. In certain circumstances, however, transport may have the effect of lowering rent. For example, the import of cheap food stuffs into a country may drive inferior agricultural land therein out of cultivation and thus decrease rent. Although this is possible, it is not a very likely result as the pressure of population on land is continually on the increase.

Another economic consequence of transport is that it increases the rate and quantum of interest on finance capital. We have seen that transport creates new, and enlarges, old markets. This leads to more and more investments of capital in industries to supply the extended markets. The growing demand for finance capital raises the *rate* of interest on it; and the larger volume of investments naturally increases the *amount* accruing as interest. In modern times finance capital has become a powerful international factor, and transport is mainly responsible for this development.

Transport also leads to increase in wages. Increased production requires greater employment of industrial labour. The larger demand for labour raises wages. Moreover, facilities of transport increase the mobility of labour which enable the latter to move quickly and conveniently from a place where wages are lower to another where they are higher. Mobility of labour greatly depends upon transport which keeps wages uniform in wide areas.

Similarly, transport tends to equalise prices. We have seen that transport widens the market. Most industrial products to-day are supplied to a single market, i.e., the world market. A uniform price for the same article rules this market, save for the difference in the charge of transporting it from the place of manufacture to two given places of consumption. Further, transport equalises prices by intensifying competition. As a general rule, competition lowers prices. Another way in which transport equalises prices is by moving things from surplus areas to deficit areas. This is particularly noticeable in India where bumper harvests in some regions and partial or total failure of crops in others during the bad year are a common occurrence.

Aid to Consumption. Transport is an aid to Consumption. As already stated, it makes commodities available in wide markets at low prices and thus increases their consumption. By increasing the exchange of commodities, as mentioned before, transport stimulates consumption. Increased consumption means in Economics a rise in the standard of living.

KINDS OF TRANSPORT

The various kinds of transport can be grouped under four heads. These are (i) Rail transport, (ii) Road transport, (iii) Water transport, and (iv) Air transport.

RAIL TRANSPORT

Importance of Rail Transport. Railways occupy an important place among the various means of transport. In recent times, however, their primacy has begun to be challenged by road transport, i.e., motor-bus and lorry. Nevertheless, railways hold their own in respect of long distance journey and the transport of raw materials of industry and all kinds of bulky and heavy articles.

For long distance journey the railways provide greater comfort, especially in the higher classes of accommodation. A long journey by motor-bus is very uncomfortable on account of the absence of proper amenities in this mode of travel. In England and the United States of America there has been a considerable growth of long distance bus services. Their popularity in these countries is due to lower fares. Since trains run on exclusive tracks they can maintain a consistently higher speed than buses which ply on public roads amid a variety of traffic. The average speed of railways is about 60 miles per hour while that of buses is only 25 miles. The speed of buses is generally limited by law in the interests of public safety and for the prevention of damage to roads. The carrying capacity of a motor-bus is very much less than that of a railway train and, therefore, is not adequate to meet the demands of heavy or intensive traffic. As railways are subject to the law of decreasing costs, the greater the traffic the cheaper will be the fares on them.

The railways have to face a certain degree of competition from air transport over long distances, but this is limited to higher grade traffic. Inland waterways and coasting vessels to some extent compete with railways in the sphere of low grade traffic where slowness of speed does not much matter and cheapness of transit is the main factor.

Rates and Fares: In considering the theory of railway rates and fares two characteristics of railways have to be

kept in view. One is, that the fixed capital of railways represents a high proportion of the total railway expenses, while in other enterprises generally the ratio of fixed costs to variable costs is much lower. The variable costs of railways consist of the actual expenses of working any particular traffic such as loading, provision for special wagons, wages, cost of fuel, etc. The fixed costs consist of charges for maintenance of plant and equipment, salaries, interest on capital, taxes, contribution to the sinking fund, etc. In the first group the cost bears a direct relation to the traffic, whereas in the second it is largely independent of the traffic and remains more or less constant. According to W. Z. Ripley two-thirds of the entire railway expenses come in the class of fixed costs. The large proportion of fixed costs shows that the railway is a concern which obeys the law of increasing returns. As the traffic increases the cost per unit will be lessened because the overhead charges will be spread over a larger volume of traffic. This fact has a special significance to the traffic manager. When the traffic is less he has reason to lower the rate in order to attract more traffic.

Another characteristic of railways is that the costs of railway services are incurred jointly. A railway carries different kinds of commodities which may vary in size, value and weight. Bridges, tunnels, tracks, etc., may be used both for passenger and freight services. The entire railway plant may be used to perform a large number of services, and therefore, it is difficult to calculate what portion of the total expenditure is to be charged to a particular consignment or passenger.

Different Theories. Various theories have been put forward as regards the fixing of railway rates and fares. Important among them are:

(1) *Cost of Service Theory.* According to this theory railway rates and fares should be based on cost of carriage of goods and persons with an allowance for reasonable profit. Though the theory looks simple there are difficulties in its application. If cost means variable cost it can easily be ascertained, because the expenses are incurred in connection with the carriage of a particular traffic. But if cost

includes the variable cost as well as the fixed cost then it is difficult to calculate how much of the fixed cost should be allocated to the particular traffic, as the costs are incurred for the service as a whole.

Secondly, cost is variable as it varies with the volume of traffic. Hence cost can only be ascertained after the service has been rendered, while the schedule rates should be known beforehand. From this it would be evident that costs cannot form the basis of fixing railway rates and fares since at any given moment costs are indeterminable. Even if cost were determinable it would not be expedient or in the public interest to make it such a basis. The goods traffic of railways consists of many kinds of commodities of varying values. To make each of them bear a proportionate share of the cost of carriage would restrict the movement of low priced goods. At the same time it would lessen the total traffic and put the burden of total cost on the higher grade commodities. Neither of the two would be in the public interest.

Cost of service, however, cannot be altogether ignored in the fixing of rates and fares. It determines the level below which rates and fares would cease to be profitable.

(2) *Value of Service Theory.* According to this theory rates and fares should be based on the value of service rendered by the railway. It means that the basis should be the demand for railway services, which is a sort of index of the value of the services rendered by railways. On this principle rates and fares would be fixed according to the difference in place values of commodities. If the price of a commodity, say in Allahabad, is Rs. 15, and its price in Kanpur is Rs. 20, then the maximum rate for the transport of the article from Allahabad to Kanpur would be Rs. 5. Theoretically, this difference is the measure of the value of the transport to a person who makes use of the railway. In practice, however, it is difficult to equate all transport charges to differences in place values. So the approximate market value of a commodity is taken as an index to the readiness of the public to pay for its transport. And the railway rate is fixed in accordance with that index. This is the principle of what is known as charging "what

the traffic can bear." Rich persons and valuable goods can pay a higher rate than poor people and cheap goods. The former are charged a higher rate which would cover both variable and fixed costs and leave a surplus as a contribution towards meeting the fixed charges incurred in the transport of low grade traffic. The latter category (poor people and cheap goods) are charged the rate which would cover just the variable cost. Thus a railway realises the maximum revenue from the two classes mentioned above.

Charging what the traffic can bear is socially beneficial because cheap and necessary articles are charged a lower rate which otherwise would not have been able to bear the higher cost of transport. Such higher cost would restrict the movement of those articles.

Another advantage of this method of fixing rates is that it is useful in developing industries. Low rates could be given to infant and struggling industries.

The cost of service theory and the value of service theory are both important. The cost of service principle fixes the lowest limit below which the rates would be unprofitable to the railway. The value of service principle fixes the highest limit above which the service would be too costly to the traders. In practice the rates will be somewhere between these limits.

(3) *Zone Rate Theory*. Under this theory the area served by a railway is divided into zones. Within each zone a uniform rate is charged. The charge will vary if a person travels from one zone to another. Generally, the more distant zone will have a higher rate. The zone system simplifies the checking of tickets and economises on printing and book-keeping, but it creates discontent among passengers. The short distance passenger pays the same rate as the longer distance passenger. The result is that the short distance passenger takes to motor transport. On the other hand, the long distance passenger is encouraged to travel by the railway. But the railway finds that the long distance travel increases the cost to the railway. The rail-

ways have had frequently to increase the rates and fares, and ultimately to abandon the system.

(4) *Tapering Rates Theory.* In the system of tapering or telescopic rates the rates per mile would decrease as the distance increases. On the long haul, costs of working are less as the terminal expenses are spread over a greater mileage. So the railway rates and fares would be less and less as the distance increases.

(5) *Equal Mileage Theory.* This theory implies that the same rate should be charged per mile whatever the distance and the section. It is opposed to the cost of service principle. Cost varies in different sections according to traffic conditions, operating expenses, etc. Equal mileage rates have been found to be impossible, and so the rates have been made tapering.

Railway Rates in Practice. Generally, a railway is a monopoly and can charge differential rates. On that basis rates and fares could be so fixed as to obtain the maximum revenue. But in practice a railway does not possess an absolute monopoly. In every country railway charges are regulated by the state which fixes the maximum which the railways are not permitted to exceed. In other ways, too, the state exercises control over railways. In some countries certain classes of people like members of the civil and defence services are given concession rates on the railways under orders of the state. Again, a railway does not possess a monopoly of transport. Alternative means of transport, e.g., bus service, have got to be reckoned with. The rapid growth of motor transport in recent years has been an effective check to high railway rates and fares. Thus, actually, the monopoly of railways is whittled down. Nevertheless, it is owing to monopoly that railways are able to charge differential rates. The method of differential charging is applied by means of classification. The classifications are based on the value of commodities or on the principle of what the traffic can bear. Articles of a higher value will be placed in a higher class and charged a higher rate, while articles of a lower value will be placed in a lower class and charged a lower rate.

Another factor which influences classification is the difference in cost of service. On certain sections the operating charges of railways are greater than in others owing to the existence of tunnels, bridges, other expensive works, and a higher rate is therefore charged on those sections. Similar principles apply in the case of articles which involve extra cost of handling, e.g., glassware, perishable articles of food, articles which are not packed and which therefore, need special care. Other factors that have a role in classification are (1) regularity of the flow of traffic, (2) bulk of an article in proportion to its weight, (3) type of wagon required, (4) time within which goods have to be conveyed, and (5) availability of alternative routes.

After classifying articles, rates are fixed for each class. The freight tariff gives the rates per maund or ton for different classes of goods.

In addition to these classified rates there are special rates fixed by the railway for specific commodities which are called commodity rates. The commodity rates are lower than classified rates.

Freight rates on Indian railways are generally based on the value of goods carried. Goods are grouped into sixteen classes, and the maximum and minimum rates are fixed by Government. The class in which a commodity is placed determines the maximum rate for that commodity. But railways are free to charge rates below the maximum so fixed. The minimum rate, however, cannot be lowered without the permission of the Railway Board.

The rate actually charged for a commodity comes within one or other of the following categories :—

(1) Class rates which are rates per maund per mile.

(2) Schedule or telescopic rates decreasing with the increase of distance. These are charged for low priced articles.

(3) Special rates which are reduced rates for certain

commodities which cannot bear the class rates.

History of Indian Railways. The first proposals for the construction of railways in India were made in 1844, and the Government of India entered into contracts with the East Indian Railway Company and the Great Indian Peninsular Company for the opening of two railway lines from Calcutta and Bombay respectively. This system of giving contracts to companies for the construction of railways was generally adopted by the Government of India since 1853. Lord Dalhousie, while Governor-General, decided to have a network of railways spread over India, and adopted the guarantee system to this end. Accordingly, contracts were made with eight companies between 1854 and 1860. The main features of the contracts were (1) free grant of land by the Government to the companies, (2) the guarantee by the Government of interest at rates ranging from $4\frac{1}{2}$ to 5 per cent on the capital which the companies invested, and payable at 22 ps. per rupee, (3) the utilisation of half of the sums which the Government ever paid to make good their guarantee in respect of the rate of interest on the capital invested, (4) reservation of certain powers of superintendence and control by the Government in all matters relating to railway management except the selection of the staff, (5) option to the Government to purchase the railways after a fixed period of time.

This system proved to be a great drain on the Government as the companies were not able to earn 5 per cent on their working capital, and the Government had to make up the deficiency. Since the Government had guaranteed a high rate of interest the companies had no incentive to economise their expenditure. It was unwise of the Government to have guaranteed the rate of interest they did. Capital could have been attracted from Great Britain even without the guarantee. The Government realised their mistake and were not prepared to continue the guarantee system. After 1869 they began to construct railways themselves with borrowed capital. Thus followed a policy of vigorous railway construction, but owing to famine and adverse conditions the Government could not continue their programme. Hence they had to resort to companies again. Between

1879 and 1900 contracts were made with the Bengal-Nagpur Railway Company and the Madras and Southern Mahratta Railway Company on a new basis of guarantee. The chief features of the agreements were. (1) the lines constructed by the companies were declared to be the property of the Secretary of State for India-in-Council, who could terminate the contracts at the end of 25 years or at subsequent intervals of 10 years on repayment of the capital invested by the companies; (2) interest was guaranteed at the lower rate of $3\frac{1}{2}$ per cent on the invested capital; (3) the Government could retain three-fourths of the profits for their own use. When contracts under the original system of guarantees expired the Government did not renew the agreements. Instead, some of the railway lines like those of the Eastern Bengal, the Oudh-Rohilkhand, and the Sind-Punjab companies were purchased by the Government who also took over their management. In other cases, like the E. I. R. and the G. I. P. R., the Government bought up the lines but handed over the management to the respective companies under revised agreements. Other types of railways also came into existence during this period. Further, Indian States were invited by the Government of India to undertake railway construction within their borders. Hyderabad was the first among these States to build its own system of railways.

The Indian railways did not make a profit till 1900. The State incurred a loss of £51.52 millions on them. After 1900, however, the railways began to yield a net return to the State. Till 1910 the gain was small ; but by 1919 it amounted to the substantial amount of £44.74 millions.

The management of State-owned railways by companies was not favoured by the Indian public. This feeling was heightened by the ill-treatment of third class passengers. Also, there were bitter complaints that the rates and fares were manipulated with the deliberate intention of crippling Indian industries, that undue preference was given by the railway companies to British firms in the purchase of stores, that Britishers and Anglo-Indians were favoured in the railway service in respect of recruitment and promotion. In 1920 the Acworth Committee was appointed to consider, among other matters, whether the East Indian and the Great Indian

Peninsular railways, which were State-owned but managed by companies, should be taken over by the Government for management on the expiry of their contracts in 1924. The Committee reported in favour of State management of railways, and in 1924 the State assumed the management of these two railways. Other railways were taken over by the State for management as soon as their contracts expired. Another important recommendation of the Acworth Committee was that Railway Finance should be separated from the general finance of the Government of India. The reasons urged for the proposal were: (1) that the separation would remove the element of uncertainty from the annual budget estimates of the Government, an uncertainty arising from the inclusion of the railway profits, variable according to trade conditions, in the Budget, with the result that a correct estimate of the yearly income of the Government was almost impossible; (2) that the dependence of the railways on the General Budget hindered them from being managed on a commercial basis; (3) that the practice of voting fresh amounts when the grants under Railway Finance lapsed automatically at the end of every financial year, led to a great deal of inconvenience. Under the Committee's proposal a contribution from the Railway Finance was to be made to General Finance to the extent of one per cent on the capital at charge of commercial lines, and one fifth of the surplus profits. The Committee also recommended a guaranteed programme of expenditure of Rs. 150 crores spread over a period of five years for the improvement and completion of lines and for provision of amenities for third class passengers. The Committee further recommended the constitution of a Railway Board for the administration of the railways and outlined its functions, and the establishment of a Rates Tribunal to adjudicate on disputes regarding rates between the railways and the public.

The Indian Legislative Assembly approved of the recommendations of the Acworth Committee which were then given effect to except in one important particular. The Government of India did not agree to a Rates Tribunal, but appointed in 1926 a Rates Advisory Committee to hear complaints of undue preference, unreasonableness of rates, inadequacy of facilities, etc. It must be noted that there is difference in status between an advisory committee and a tribu-

nal. The decisions of a tribunal are final and binding on the parties, like the judgments of a court of law; whereas an advisory committee can only tender advice which the Government, a party in railway disputes, may accept or reject at their discretion.

The years 1924-27 were years of prosperity. The total surplus revenue from the railways during this period amounted to Rs. 5264 lakhs, and the total contribution from Railway Finance to General Finance came to Rs. 42 crores in addition to Rs. 41½ crores credited to the Depreciation Fund.

The depression period from 1929 to 1936 was an era of deficit in which the railways not only failed to make any contribution to general revenues but depleted their reserves, and even borrowed from the Depreciation Fund. The deficits were partly due to the world depression and partly to railroad competition. The Retrenchment Committee in 1931 and the Pope Committee in 1932-33 recommended the manner and shape of retrenchments on the railways.

After 1936 the railways again began to yield surplus owing to the recovery in trade and the reduction in expenditure effected by the adoption of measures the two Committees had suggested. The railways were, therefore, able to make some contribution to General Revenue. Still the fact remained that the railways, on account of competition from road transport, were not earning as much as they did. So in 1936 the Wedgwood Committee was appointed to suggest ways of meeting the road competition and of further reduction of railway expenditure. The Committee reaffirmed most of the recommendations of the Pope Committee for retrenchment and reduction of expenditure. Some of the recommendations of the Wedgwood Committee aimed at securing the following improvements: (1) reduction of locomotives and carriages under repair; (2) amalgamation of workshops for construction of rolling stock; (3) acceleration of trains; (4) withdrawal of unremunerative services; (5) greater caution in capital expenditure; (6) a campaign to root out dishonesty and incivility from among the railway staff. In regard to road competition the Committee emphasised that the railways should have full powers to run road transport services through

contractors and to invest in, or to enter into working arrangements with, road transport undertakings, and that the Motor Vehicles Act should be amended in order to regulate more efficiently the motor traffic.

During the Second World War there was vastly increased traffic of goods and passengers on the railways, especially on the military side. The demands of the Defence services were so heavy and urgent that the railways had to curtail civilian traffic, with the result that there was tremendous over-crowding in trains, which has not yet ceased though the war came to an end in August, 1945.

Lines of Future Development: The Indian Railway Board have prepared a programme of post-war railway development estimated to cost Rs. 1,200 crores and to be completed in 17 years. The expenditure in the first seven years is to be Rs. 320 crores. Five thousand miles of new lines are to be constructed.

ROAD TRANSPORT

Advantages of Road Transport : Among the advantages of road transport the foremost is its cheapness due to the following reasons : (a) The roads are built and maintained by public bodies, and anyone can ply vehicles on them provided he pays such fees as are fixed by law. The railways, on the other hand, have to construct and maintain their own permanent ways. The cost under these heads is enormous. It is estimated that the initial expenses of constructing a railway would be £ 10,000 per mile. Roads could be constructed anywhere at a fraction of the cost of railways. Besides, in the case of railways, a large sum of money has to be spent on the construction of stations, sheds, sidings, warehouses, cabins, signals, staff quarters, etc., and their maintenance requires considerable recurrent expenditure. (b) Road vehicles cost much less than a railway train. Among road vehicles the most expensive are the automobiles. Before the war motor buses and lorries did not cost more than Rs. 6,000; now they cost about Rs. 15,000. As for the bullock cart and other road vehicles, they cost very little.

Another advantage of road transport is its flexibility. A road vehicle is free to choose and change its route unlike railways. It can also pick up and drop passengers at their houses, which railways could never do.

A road vehicle of the improved type could convey goods and passengers from one point to another without break. It is an advantage, because a through journey saves the delay and bother incidental to change of trains on railways. In the long run the greater speed of railways can make up for the delays, but when the distance is short the mechanical road vehicle can compete successfully with railways.

Yet another advantage of mechanical transport is that it need not observe a rigid time-table. On railways the merchant or manufacturer has to send his consignment subject to the schedule and the exigencies of railway traffic whereas the road vehicle is amenable to direct control by the customer. Small lots sufficient for a van load can be despatched direct from one place to another at any time. In the case of perishable articles or sudden demands quick delivery is of great importance. Mechanical road transport is especially useful in such situations. Railways cannot render service of this kind.

Road transport has been found suitable for promoting the exchange of commodities between towns and their neighbouring villages. Rural produce like milk, eggs, vegetables, etc., can be cheaply carried to the markets in towns. If vans are specially fitted for such traffic there is no need for packing, while on railways careful packing involving labour and expense is necessary.

Loss through damage in transit, particularly in the case of delicate articles like glassware, or through pilferage or theft, is less in road transport since the packages are under the control of one person throughout the journey and responsibility can be fixed. On railways in India pilferage and theft are very common. Traders generally consider that the diminution in the possibility of dispute with regard to claims for damages for loss of articles in transit, is a distinct advantage.

The motor bus is especially suited for urban transport. With increase in population the tendency in cities is for people to spread out to the suburbs. This expansion is to their benefit, as in the suburbs living is cheaper. It is possible only if quick transport with low fare is available. The motor bus has both these advantages. The railways by themselves cannot relieve the congestion in cities. The electric train has reduced it a little, as in Madras and Bombay, but no railway can cover all the routes in a city. The motor bus, being cheaper, quicker and more mobile, offers a better solution of the problem. To the vast number of city workers quick and cheap transport is a boon. Such transport increases the leisure of citizens, and makes for public health and greater civic responsibility as an outcome of decentralisation.

Sphere of Road Transport: Road transport is best suited for light traffic and short distances. For long distances and heavy traffic railways are more serviceable. Where the roads are good, motor vehicles are a popular means of transport. The average load capacity of a motor lorry is $2\frac{1}{2}$ tons. For small consignments it is well suited. Upto a distance of 100 miles motor vehicles are most economical. Beyond that railways are more advantageous. But in England and the U. S. A., the railways encounter competition from motor transport even for longer distances than 100 miles on account of the low fares on buses. However, motor vehicles have not entirely supplanted horse wagons and bullock carts, especially in the backward countries. The reason is that motor vehicles are expensive, and it is beyond the means of the poorer classes to buy and run and maintain them. Bullock carts and horse wagons are cheap and economical, and very useful for short journeys or in places where the streets are narrow and congested, where delays in loading and unloading are considerable, and where the traffic is too sparse to profitably employ motor vehicles. For distances ranging from three to ten miles the bullock cart is most economical. Bullock cart can carry goods up to a distance of 50 miles, and its average load capacity is about 40 maunds, when the draught animals are good as in the Punjab. Animals like donkeys and camels are still in use in regions which have vast deserts, or which have no proper roads. A camel can generally carry up to 10 maunds.

Road Transport Rates and Fares : The capital outlay required for road transport service is rather small. It is little more than the cost of the vehicles. The operational expenses may be classed as (1) standing or fixed charges, (2) running expenses.

The standing charges remain the same whatever be the volume of traffic. The running expenses depend upon the volume of traffic.

The chief feature of standing charges is that as compared with the railway these are much smaller. In road transport the running expenses are far greater than the standing charges and therefore it is possible to allocate costs against any particular traffic.

The cost of service is the determining factor in fixing rates and fares in road transport. Competition generally prevails in road transport. Hence rates and fares approximate to the cost of service. Sometimes competition is so keen that the rates and fares go even below the cost of service. No service can continue for long under such terms. Frequently acute competition results in the establishment of monopoly. When a monopoly is held by a company, municipality or state, the effect as a general rule is to raise the rates and fares above the competitive level. But owing to economies of large scale working and to competition from rail or canal transport the rates and fares are not unduly raised.

Fixation of Fares in Practice: It is essential that the fares should be so fixed that these should be easily understood by passengers. The method of charging should be clear and simple, and be so devised as to facilitate the work of the conductor. The systems commonly used are (1) flat rate system, and (2) zone rate system.

(1) *Flat rate system.* Under the system of flat rates the same fare is charged for short and long distances. It has the advantage of simplicity, but makes the short distance passenger, so to speak, pay for the long distance passenger since the fare charged would be the average of charges for the two.

(2) *Zone rate system.* In this definite stages or zones are fixed. Within a zone a uniform rate is charged. Here also the short distance passenger within a given zone is at a disadvantage in comparison to the long distance passenger.

History of Road Development : The excavations of the Archaeological Department of the Government of India at Mohenjadaró in Sind, and Harappa in the Punjab, have revealed that in these places cities had existed between 3,500 and 2500 B.C. which had roads with drainage systems. During the Buddhist period great progress was made in road constructions. Asoka built roads well provided with avenues and rest houses for travellers. Sher Shah, Akbar, Aurangazeb, all carried out projects of road-making to link the capitals of their kingdoms with the outlying parts thereof.

However, it is with the advent of British rule that a planned system of road construction was adopted. The object of this system was originally strategic, and the construction and maintenance of roads formed part of the work of the Military Department. A number of trunk roads were constructed, connecting important commercial and military centres. A change in this policy was made by William Bentinck and Lord Dalhousie when the Military Board was replaced by the Public Works Department in 1855. The extension of roads was helped by the introduction of railways. New roads had to be made to bring traffic to the railways. The granting of local self-government during the viceroyalty of Lord Ripon was a further stimulus to road construction. We have to-day four great systems of road with which subsidiary roads are linked. These are the Grand Trunk Road extending from Calcutta to Khyber, the Madras-Calcutta, the Madras-Bombay, and the Bombay-Delhi roads, which account for 5,000 miles out of 95,054 miles of metalled roads in what was till recently known as British India. The region best served with roads is South India and the worst served parts are Rajputana, Sind, and the Punjab. In 1943 there were 95,054 miles of metalled roads in India, of which the mileage of roads with modern surface was only 15,121. In addition there are 201,384 miles of unmetalled roads of which 16 per cent have motorable surface. The total length of roads in the whole of India (before Pakistan

came into being) was 296,438 miles, representing 76 miles per 100,000 of the population. The following is a comparative table in respect of roads :

| Country | Road mileage to the sq. mile | Road mileage per 100,000 of population |
|---------------|---------------------------------|--|
| Great Britain | 2.02 | 392 |
| France | 1.84 | 934 |
| U. S. A. | 1.01 | 2,499 |
| Germany | 0.95 | 260 |
| Italy | 0.89 | 247 |
| India | 0.18 | 76 |

In India there are 6,55,892 villages. Rural life dominates the over-all picture of the country, and therefore any scheme of national development should embrace plans for the improvement of the villages. An essential requisite of such improvement is the construction of roads to connect the villages with the main roads. Metalled, all-weather roads suited for motor transport will be a boon to the villagers who form the bulk of India's vast population. For then they will be able to market their produce more easily and to greater advantage, and they could eliminate the middle-man. As more and varied markets come within the reach of the cultivator he will naturally be in a position to get out of his traditional groove and to grow new kinds of crops. Good roads will enable him to take to what is called "money crops", for example, cotton, jute, tobacco, in preference to "food crops". His income from land will thus increase in terms of money, and this will raise his standard of living. Quick transport will also help villagers to grow perishable articles like vegetables and fruits, and to engage themselves in such profitable occupations as fishing, poultry farming, bee keeping, etc., for which there is ample scope in many of the Indian villages.

Good roads benefit villagers in the purchase of their requirements as in the selling of their produce. Various

kinds of agricultural seeds, artificial manure, tools, implements, etc., which the cultivator requires, could be bought cheaper and taken to the village at greater convenience. It is an axiom that a market is in itself a two-way traffic, i.e., buying and selling. Good roads will bring the villagers within the circuit of such traffic.

It must be remembered that Indian village economy is largely dependent upon the services of draught bullocks. Bad roads increase the strain on these animals and prematurely disable them. A common cause of chronic rural indebtedness is the recurring expenditure on draught bullocks which either die or are rendered unfit for work owing to the heavy load they are made to pull on uneven grounds where the going is bad.

The cultural effect of better roads on villagers will be considerable. They will be gradually drawn into the world stream of progressive trends, and in consequence will shed much of their sense of helpless fatalism.

The Government of India convened a conference at Nagpur in December, 1943, which was attended by 30 Chief Engineers of Provinces and States, to consider the question of road development. The Conference resolved that India will need some 150,000 miles of village roads in order to bring villages reasonably close to a planned road system. This decision was part of a 20 year post-war road development scheme which has come to be known as the Nagpur Plan. Details of the Plan will be mentioned later; reference to it is made here only to show that the great importance of village roads has been officially recognized.

At present there is an acute inadequacy of good roads in rural areas. Most of the tracks in the country side are mere footpaths. The district boards have constructed a few roads in some of the bigger villages. Even these are not metalled and are unable to stand the strain of increased motor traffic and the more frequent use of bullock and buffalo carts with thick metal rims to their wheels. For want of funds these roads are not kept in proper repair.

Absence of bridges is another defect of rural roads. During

the rainy season an unbridged river may render a whole road quite useless.

A feasible way in which local bodies could serve the villages is the construction of what is called "fair-weather roads" in contradistinction to "all-weather roads." Fair weather roads have no metalled surfaces and their usefulness will be greatly decreased during the rains. But as the rainy season in several parts of India does not extend beyond three months, and as the building of fair weather roads is much less expensive, this kind of roads will be a practicable, immediate solution of one of the pressing problems of rural reconstruction. Their construction should be planned as part of a national road system and the ultimate objective should be to convert them into all-weather roads as and when finances permit. In building fair weather roads the initiative and co-operative enterprises of inhabitants of a village or groups of villages should be enlisted. The rural development departments of some of the Provincial Governments have done a small amount of pioneering work in this direction. But it has not been in accordance with a pre-conceived co-ordinated plan, and has no long-range value.

Finance and Administration: The maintenance of roads in India rests with Provincial Governments and Local Bodies like district boards and municipalities.

In 1927 the Government of India appointed the Indian Road Development Committee to explore the possibilities of road development in India and to consider how best such development may be financed. The Committee recommended that the duty on motor spirit should be raised from the then current rate of 4 As. per gallon to 6 As., and that the proceeds from the additional duty should be kept apart to form a separate fund for the development of roads. They pointed out that village roads should be developed and larger grants made to municipalities and district boards. Accordingly the Central Road Development Fund was created in 1929. The fund was distributed among the Provinces on the basis of their petrol consumption, but 15 per cent of it was retained as a central reserve to be used for (1) technical research, (2) administration of the Road Fund,

(3) schemes considered to be of special importance to road development, (4) special assistance to backward areas or Provinces. In 1937 it was laid down that 25 per cent of the share of each Province should be spent on feeder roads, and that not more than 25 per cent of such share should be spent on roads competing with the railways.

The Fund is to be used along with the sums which Provincial Governments budget for the construction and upkeep of roads. But many of the Provinces reduced their expenditure on roads when they received a share of the Road Development Fund. Road development, therefore, was not so rapid as expected.

An important landmark in road development in India is the founding of the Indian Roads Congress in 1934 on the initiative of Mr. M. C. Mitchell, the then Consulting Engineer (Roads) with the Government of India, to promote the interchange of ideas and the pooling of experience in road construction and maintenance. The Government of India supported this move and agreed to defray the whole cost of the first session of the Congress, which was held at Delhi in 1935, from their reserve in the Central Road Fund, so far as official delegates from the Provinces and the Indian States were concerned. The unqualified success of that session induced the Government of India to finance the annual meeting of the Congress for a further period of two years. The Congress has come to stay by reason of its good work.

In recent years interest has been aroused in road development as a means of rendering the transition from war-time to peace-time economy as smooth as possible. A concrete result of that interest is the Nagpur Plan outlined by a conference of engineers convened by the Government of India at Nagpur in December, 1943. The Nagpur Plan recommended the immediate setting up of a Central Road Board with adequate authority and powers, guided by an Advisory Council, to deal with the policy and day-to-day administration of road planning and programme, and to serve impartially the interests of the Central, Provincial, and State Governments. This proposal was considered by the Standing Committee for Roads of the Government of India in Novem-

ber, 1944. The consensus of opinion in the Committee was in favour of the general idea, but the Committee desired that more progress should be made in consultation with Provincial Governments concerning the scope and nature of the organization before they pronounced an opinion.

The Nagpur Plan suggested that India would need some 400,000 miles of road, half of it all-weather surfaced. It further recommended the classification of all roads into:

(i) National Highways, i.e., main trunk roads traversing Provinces and States, being of national importance and connecting ports, foreign highways, capitals of Provinces and large States, including roads required for strategic purposes;

(ii) Provincial and State Highways, being all other trunk or arterial roads of a Province or State;

(iii) Major District Roads;

(iv) Minor District Roads;

(v) Village Roads.

Other recommendations of the Nagpur Plan are :

(i) the assumption by the Central Government of complete financial liability, covering both fresh development and annual maintenance, for the roads designated as National Highways;

(ii) that the Central Government should assist actively in the co-ordination of road development, planning, providing for central road research, central standards and specifications, and technical advice covering all aspects of road construction and maintenance;

(iii) Central assistance in the planned procurement of road-making machinery and essential materials such

as cement, tar, bitumen;

(iv) Central assistance in increasing the output and the quality of trained road engineers;

(v) a Central machinery for advising on legal problems relating to land acquisition, prevention of encroachments, betterment values and so on.

The Government of India have on their own part implemented many of the recommendations of the Nagpur Plan, and have assumed from April 1, 1947, complete financial liability for the construction and maintenance of every road which is classified as National Highway, subject to the acceptance by the Provincial Governments of certain conditions, namely, that:

(i) the Central Government's decision will be accepted about the inclusion of any road in the National Highways system, the standards to which the different parts thereof should be developed and the priority of execution of work thereon;

(ii) expenditure on works will be subject to the approval of the Central Government;

(iii) while the Provincial Public Works Department will normally be employed, the Centre reserves to itself the right to employ its own agency for the construction and maintenance of roads;

(iv) while proprietary rights over the road assets remain vested in the Provincial Governments, the Provincial Governments will regulate traffic, prevent encroachments, control ribbon development, restrict access to National Highways and tax betterment (or unearned) value in accord with the public interest and upon the advice of the Central Government. The Centre will not, however, receive any payment on account of betterments;

(v) no tolls or other imposts will be levied on motor vehicles paying tax, and all non-commercial Central

Government motor vehicles will be exempt from provincial and local taxation;

(vi) Provincial Governments will take special care to foster development of district and village roads; and,

(vii) road transport will generally be controlled in conformity with an agreed code of practice. In taking decisions which rest with them on the foregoing conditions, the Central Government act in close consultation with the Provincial Governments.

(Note—The technical phrase “ribbon development” occurring in condition (iv) above means the location of industries, especially light industries, along the line of a well developed and maintained road. Experience in the industrially developed countries shows that ribbon development in the long run results in harm to the industries and defeats the object which induced them to establish themselves along such roads. Hence the need to control it in India which is just embarking on large scale industrial and other developments.)

It may be mentioned here that the subject “National Highways declared to be such by Federal Law” has been included in the Federal List of the draft constitution of India and if this item is finally adopted in the new constitution, which in all probability it will be, the centre will have the necessary legal and constitutional authority for undertaking and maintaining the National Highway system. And this will enable the Centre to give effect to the recommendation in the Nagpur Plan for a Highway Act for India. The Plan has also recommended an enactment to prevent “ribbon development”.

The road development proposed by the Nagpur Plan is estimated to cost Rs. 450 crores. The allocations under the Plan are, broadly, as follows:

| | | |
|------------------|-----|----------------|
| Construction | ... | Rs. 350 crores |
| Land acquisition | ... | Rs. 50 „ |
| Bridges | ... | Rs. 50 „ |

As already stated, the development is spread over a target period of twenty years. On its completion the road mileage will be as under :

| | | |
|-------------------------|------------------|--|
| 1. National Highways | ... 18,000 miles | (After partition it will only be 14,000 miles in India.) |
| 2. Provincial Highways | ... 72,000 miles | } Pre-partition figures |
| 3. Major District Roads | ... 60,000 " | |
| 4. Minor District Roads | ... 100,000 " | |
| 5. Village Roads | ... 150,000 " | |

WATERWAYS

Cheapness of Water Transport : The cheapest kind of transport is that by water. The construction and maintenance of roads and railways require large sums of money. In the case of water transport the permanent way has already been made by Nature, i.e., seas and rivers. It is true the construction of navigable canals is expensive. Even so, their cost is much less than that of railways. The outlay on docks, wharves, warehouses, necessary for improved water transport, is smaller than on stations, sidings, cabins, signals, staff quarters, etc., of railways.

Another reason for the cheapness of water transport is the low resistance offered by water, which requires but little power for this means of transit. The resistance of water is only one-fifth of the average resistance met with by trains on railways. Low resistance reduces the risks of damage to cargo, and insurance premiums are therefore not high.

A ship can deal more efficiently with heavier loads than railway wagons, motor lorries, or commercial airplanes. The load capacity of the biggest railway wagon is about 50 tons, whereas an ordinary ship can carry twenty times as much. Furthermore, cargo can be loaded and unloaded directly in the case of ships but railways will only serve through stations and hence the loading and unloading operations on them have to be repeated.

Water transport has yet another advantage. On land there are frontiers, and custom houses which demand inspection of packages in transit. This necessitates what is called "break of bulk" of consignments. In marine transport there is no need of break of bulk.

Water transport is best suited for carrying heavy goods of low value when the time factor is not important.

Limitations of Water Transport: The slowness of water transport, especially of canal transport, is a serious limitation, when increasing speed is a notable feature of modern times. Therefore water transport is serviceable only when the element of time can be safely ruled out.

The construction of canals is not feasible in terrains that are rocky or mountainous.

Owing to the freezing of water in extreme cold, water transport suffers from a natural handicap in cold countries, the more so in winter. And in hot countries there may not remain enough water for navigation in rivers and canals in the summer. Most of the rivers in South India dry up in the hot weather.

Inland Water Transport Rates and Fares: Canal transport services require only a simple business organisation. An individual or small partnership may own and operate one or more boats without having to invest much capital. Transport charges consist of (1) tolls, and (2) cost of service. When the traffic is large and varied the transport concerns naturally become bigger and more complex in organisation and they resort to a system of classification of rates and fares on lines more or less analogous to those of railways.

Marine transport: Freight and passenger transport on the high seas is conducted by different types of ships, and the two kinds of services are more or less distinct. Passenger traffic is carried by steamers operated as "lines" on which ships have definite routes and fixed schedules of sailings. Freight is carried by (1) steamers plying on lines with fixed sailings and definite routes, and (2) tramps which have no

fixed sailings and which seek cargo in any port of the world. The lines consist of many ships necessitating a large amount of capital. The tramps are operated on the basis that each of them is a single unit, and, therefore, they do not require a large investment. The greater share of cargo traffic is carried by tramps.

Passenger traffic is handled entirely by steamship lines. Fares charged by them are competitive, but as only a few companies operate on particular routes competition among them is regulated by agreements as to routes, speed, and schedules of sailing. Cabin fares are easy to arrange by conferences and agreements of competing lines, but not so in the case of steerage service or third class passengers. The largest profits are made by steerage service, and so competition in it is keener. There is greater rivalry with regard to freight service than passenger service. The reason is that passenger service is handled by a limited number of steamship lines, whereas cargo traffic is handled mostly by tramps.

Ocean freight traffic consists of two kinds: (1) Full vessel cargo shipments, (2) partial cargo and line or general cargo freight. When commodities are shipped as full vessel cargo the freight charges consist of the hire of the vessels. Vessels may be chartered for a single voyage or for a definite period. The payment for a single voyage is fixed at a certain rate per ton of cargo. If the vessel is chartered for a fixed period then the rate is a certain amount per vessel per its tonnage per month. In the determination of charter rates the theory of free competition applies. In other words, these rates are fixed by conditions of demand and supply.

General freight despatched in small quantities is handled by line vessels having regular routes and fixed sailings. Liner rates are not uniform. Commodities shipped are classified, and the rates vary with the classes. Goods of higher value pay higher rates. The liners with their advantage of regularity and speed can charge a higher rate than the charter rate, though sometimes the liner rate is lower than the charter rate. When a ship is loaded with high grade cargo it may also take in articles of a low grade at a rate lower than under ordinary conditions. For low grade

during a given period, certain ports may also be exclusively allotted to certain lines.

Inland Water Transport—The rivers in Northern India were important highways of commerce before the introduction of railways. Now river navigation in this region has fallen into disuse, except in Eastern Bengal and Assam. The Brahmaputra and the Hoogly still carry large traffic. But the Ganges is used for traffic only in Bengal and Bihar, though it is navigable up to Kanpur. The river Gogra on which steamers used to ply as far as Fyzabad is long since unused for navigation to any great extent. Of the many river navigation companies operating in Bengal and Assam, the Indian General Navigation Railway Company is the most important. The Indus is navigable up to Dera Ismail Khan, a distance of 800 miles. The Chenab Canal and the tributaries of the Indus are navigable throughout the year.

Besides these there are small rivers and backwaters which are navigable all the year round. Among the South Indian rivers the Godavari and the Kistna alone are navigable and that only to a short distance and for a part of the year. The defect of the South Indian rivers is that they have rocky beds and swift currents and they dry up in the summer. During the monsoons the rivers are flooded and navigation then is impossible.

There are only a few canals in India solely for navigation. The important ones of the kind are the Eastern and the Circular canal, in Bengal, the Orissa Coast Canal, and the Buckingham Canal. The last runs parallel to the eastern coast of India from the Kistna delta to the city of Madras. In several Provinces navigation is combined with irrigation, e.g. the Godavari and the Kistna delta irrigation systems in the province of Madras, the Hardwar-Kanpur Canal on the Ganges in the United Provinces, the canals in Orissa, and some of the canals in Bengal.

The total mileage of canals open for navigation in India was less than 4,300 in 1938-39. Of this Madras and Bengal had 1400 miles each, and all the other Provinces together had 1500 miles. About 20 lakhs of country

boats ply on these canals, more than 90 per cent of which are cargo boats.

The railways have hindered the development of water transport in India. The cheapness of the latter makes it eminently suitable for India, and water transport has the further advantage in this country of being adaptable to irrigation. But the rivalry of the railways has prevented its expansion. An instance of this is the sad fate of the Bombay-Broach steamer service which was started in 1908, but which had to be wound up owing to the deliberate reduction of rates by the B. B. & C. I. Railway. Similarly, in Madras the railways almost wholly snatched away the traffic along the Buckingham Canal by rate cutting.

Marine Transport in India. India has a coastline of over 4,000 miles. Till about the beginning of the nineteenth century India was considered to be a seafaring country. The English historian Moreland, speaking of the period at the death of Akbar, says that the bulk of commerce in the Indian seas was carried in ships built in India, and that India had also passenger ships much larger than all European ships except those of Portugal. The coming of iron-built ships and of mechanical transport, the monopoly of British shipping companies, the operation of British navigation laws which were applied to India during the British regime, were the chief causes of the ruin of Indian shipping. Within the last 50 years about 102 Indian shipping companies came into existence. All of them have perished except some ten companies which have managed to survive. The British shipping companies, by ruthlessly cutting down the rates and by means of the deferred rebate system, have crushed most of the Indian shipping companies. India has for long desired to have a mercantile marine of her own. In 1923 the India Mercantile Marine Committee was appointed, which recommended the building up of a mercantile marine, the maintenance by the Government of India of a training ship, and a far reaching scheme of ship-building encouraged by the payment of suitable bounty. None of these recommendations was acted on by the Government except for the establishment of a training ship, the *Dufferin*.

In 1924 a bill to reserve Indian coastal shipping for Indian shipping companies was introduced by Mr. S. N. Haji in the Indian Legislative Assembly. It was argued that in the U. S. A., Australia, and Japan, all coastal shipping was reserved for indigenous concerns. The bill, however, had to be dropped because of the strong opposition to it inspired by British shipping companies which had heavy investments in coastal shipping. The Government of India Act, 1935, specifically provided that no discrimination against British companies operating in Indian coastal waters should be made.

Sir A. H. Ghaznavi in 1937 introduced a bill in the Indian Legislative Assembly to prevent unfair competition in Indian coastal waters and the crippling method of rate cutting. The Government of India opposed it on the ground that the proposed measure was impracticable, but they said they were prepared to regulate coastal shipping in India. Pursuant to this promise they tried to induce British shipping companies to co-operate with Indian shipping companies in coastal service. Later the Government announced their intention of developing an Indian mercantile marine and of forming a separate department for the purpose.

The Second World War brought a vivid realisation of the importance of a country building its own ships. On the initiative of Mr. Walchand Hirachand steps were taken for the establishment of an Indian ship building yard at Vizagapatam, a port which possesses advantages over Bombay and Calcutta, such as suitable rock bed, cheap labour, stone and timber. The Government of India gave facilities for dredging, railway transport, power supply and import of machinery. The yard has come into stride and a few ships have been completed.

The Post-war Reconstruction Policy's Sub-Committee on Shipping submitted their report to the Government of India in the middle of 1947.

The recommendations the Sub-Committee have made in the report are summarized below ;

(i) Indian shipping should be defined as shipping owned, controlled and managed by nationals of India;

(ii) that 100 per cent of the purely coastal trade of India, 75 per cent of India's trade with Burma and Ceylon and the adjacent countries, 50 per cent of India's distant trade, and 30 per cent of the trade formerly carried in the Axis vessels in the Orient should be secured to Indian shipping in the next 5 to 7 years;

(iii) the volume of trade involved in the preceding recommendations would be more than 10 million tons of cargo and about 3 million passengers in a year and India will need 2 million gross tons of shipping for this purpose (excluding country craft);

(iv) though it is not desirable now to fix a tonnage limit for Indian shipping companies nor should there be any restriction on their capital expenditure it is necessary at the same time to prevent monopolistic exploitation;

(v) the various new trades available for Indian shipping should be divided equitably between the different companies;

(vi) the defects in the existing system of compilation and publication of statistical data should be set right;

(vii) the Commerce Department should take over the administration of Port Trusts from the Transport Department.

The Sub-Committee suggested the following methods for implementing their recommendations:

1. *Establishment of a Shipping Board.* The Sub-Committee considers that the reservation of coastal shipping to the Indian flag would necessarily imply licensing. The setting up of a Shipping Board is, therefore, recommended for the efficient working of the licensing system and to regulate the coastal trade. The Board should comprise an independent Chairman, possessing considerable judicial training and

experience, representatives of Government, shipowners and commerce, and would *inter alia* have the following functions:

(a) to consider all applications for financial and other aids to Indian shipping operating in the overseas trade and to recommend to Government the form, nature and extent of aids to be granted; and also to lay down the nature and forms of State control that would need to be exercised over the companies which may receive such assistance, and

(b) to submit to Government proposals for the removal of all evils of monopolistic exploitation.

2. *Securing of Additional Tonnage.* The Sub-Committee considers that the additional tonnage of 2 millions required to give effect to its recommendations should be secured by the following means :

(a) negotiations with H. M. G. and/or British companies since it is the latter who are dominating the various trades of India;

(b) importing foodgrains by Indian tonnage and thereby encouraging Indian companies to acquire additional tonnage;

(c) helping Indian companies to purchase U. S. A.'s surplus ships;

(d) encouraging Indian companies to build ships in India and U. K.

By way of implementation of the Sub-Committee's report the Government in November 1947 announced their intention to establish shipping corporations in which Government would take 51.0% of the capital, nominate directors in proportion to the capital they contribute, and allow Indian companies to hold shares and to serve the corporations as managing agents. Accordingly in 1949 the first shipping corporation was established with the Scindia Steam Navigation Company as its managing agents. The business of the corporation is to

develop India's sea-borne trade with Australia and the Far East.

PORTS AND HARBOURS

An essential requisite of marine transport is good ports and harbours. India now has, after partition, five major ports with facilities for anchoring of ships of heavy displacement. These are Bombay, Calcutta, Madras, Vizagapatam, and Cochin.

Bombay. Bombay is the premier natural harbour of India. The port, therefore, accounts for a large share of India's export and import trade. Apart from the excellence of its harbour several geographical factors have contributed to the importance of Bombay as a port. First, it is the nearest port to Europe. Secondly, its hinterland includes the rich cotton-growing areas of the Deccan. Thirdly, the humidity of its climate is well suited for the textile industry and has made it the centre of cotton spinning and weaving. The principal exports from Bombay are cotton 48 per cent, and cotton goods 20 per cent.

Calcutta. Situated on the Hoogly about 72 miles inland from the sea, Calcutta is a river port. Nevertheless, it is one of the biggest ports of its kind, affording easy access to ships of heavy tonnage. The section of the river between Calcutta and the sea is kept clear of accumulating silt at considerable recurring cost. The tidal wave also helps to maintain the waterway. The port of Calcutta is well connected with a network of railways, roadways and rivers. Its hinterland includes Bengal, Bihar, the U. P., Orissa, Assam, and parts of even distant Punjab. Its chief export is jute.

Madras. This port is provided with a modern artificial harbour. Constant dredging is required to keep the harbour in a fit state for the entry of fair-sized ships. The port is served by railways, and the Buckingham Canal which runs through the city is navigable by country craft throughout the year. The hinterland of Madras is neither so rich nor so extensive as that of Bombay or Calcutta. The bulk of the export from Madras is hides.

Vizagapatam. In recent years this coastal town has become a first rate port. The agricultural and mineral products of the Central Provinces and of Orissa, which used to be shipped through Calcutta, are now exported *via* this port. It is well connected by railways. The harbour was first opened for sea-going vessels in 1933. The location of a ship-building yard at Vizagapatam has increased its importance, and the port has possibilities of further growth.

Cochin. This is on the direct maritime route from Western Europe to the Far East and Australia. Formerly there was a bar between the sea and the backwaters facing the port with the result that ships had to anchor off the land. The bar has been cut through, a process which involved a high degree of marine engineering and enterprise and was accomplished by the combined efforts of the Governments of India, Madras, Cochin, and Travancore. Cochin was declared a major port in 1936. Now it has a magnificent natural harbour. The port serves an extensive hinterland comprising the prosperous states of Cochin and Travancore, and the southern districts of the Province of Madras. It is the most convenient port for the planting areas of South India. The principal exports from Cochin are rubber, tea, coffee, cardamom, ginger, pepper, and copra.

Minor ports. India has a large number of minor ports like Mangalore, Calicut, Tuticorin, and Negapatam, not to speak of such ports as Alleppey, Quilon, and Colachel in Travancore. These minor ports do not possess harbours, but they can be further developed to serve as more useful links in the coastal trade of India. With more landing jetties and warehouses the country craft will be able to load and unload ships more quickly and conveniently. A more efficient country craft service between port and ship will naturally attract more and larger ships to these ports.

AIR TRANSPORT

Importance of Air Transport. Air transport has the following advantages:-

1. It is the quickest means of transport hitherto known.

2. Aeroplanes can make unbroken journeys over land, mountains, deserts, or seas. Hence the delay, expense, and inconvenience of transshipment can be avoided.

Air transport is especially suited for long distances, for places where surface transport is hindered by mountains, rivers, or seas, or for journeys when speed is essential. Its speed is a great advantage in passenger traffic. It is also suitable for the transport of delicate and expensive articles of small bulk, like wireless sets, jewellery, precious metals, gems, scientific instruments, etc.

There is less risk of pilferage and theft of goods in air transport, as there is no midway handling of cargo on planes. So insurance premiums are lower.

Limitations of Air Transport. The limitations of air transport are:-

1. The operational cost of air transport being high, aviation companies have to charge a correspondingly high freight, and only goods that permit of high rates are sent by air.

2. The fare for passengers is also very high. It is only the richer classes, more particularly those among them to whom time is money, who use air transport.

3. The usual load per plane is small, and only light articles are sent by planes. The size and carrying capacity of aeroplanes, however, are tending to increase.

4. Air transport, owing to its dependence on atmospheric conditions, does not have the same regularity as surface transport. Fogs and bad weather often interfere with air transport. Scheduled flights have at times to be cancelled on this account, and this entails expense as passengers have to be accommodated in hotels, etc. But great advance has been made in air transport in recent years, and further progress is probable. Until air transport is made independent of weather conditions it cannot successfully compete with railways or ships.

5. The element of risk is greater in air transport as there is frequent failure of engines and the possibility of sudden fires. These hazards are being reduced by technical improvements, like air cooled engines, all-metal planes and better instruments of navigation.

Air Rates and Fares. Cost of service is the chief factor in determining the rates and fares in air transport. Competition prevails, and rates and fares approximate to the cost of service. Compared to other means of transport air transport is the most costly. In recent years owing to technical developments the cost of air transport has been considerably brought down. Still it is much higher than the cost of surface transport. Unless it is reduced further air transport will not be popular.

In the reduction of cost the chief factor is the intensive use of aircraft. A fleet of aircraft represents a large investment. For a profitable return it has to be worked to its fullest capacity. Of the total cost of air transport 75% is taken up by fixed cost and 25% by running cost. To bring about an even distribution between the two classes of costs, it is necessary to increase the services and this will raise the running cost. It means that a machine must be run to its maximum capacity. It is estimated that for a fleet of Dragon Fly, a type of aircraft, the cost per flying hour starts at £10-3s-5d for six flying hours daily and is reduced to £6-0s-10d for 12 hours.

Thus it will be seen that the cost can be reduced by intensive use of aircraft. For this increased ground organisation and equipment are necessary. Besides there must be a large volume of traffic. Aircraft can be used to their full capacity only when traffic is forthcoming in sufficient volume. Traffic will not increase unless charges are brought down. There are two ways of bringing down charges: (1) by a bold policy of reduction of charges to attract more traffic; (2) by state subsidies to encourage air transport. Almost all countries give such subsidies. The reason is that commercial aviation supplies a reserve to the Air Force by providing pilots, mechanics, aircraft, etc.

When subsidies are given the companies can reduce the

charges. With reduction of charges the volume of traffic will increase. As the traffic increases the cost will be lessened because the fixed cost can be spread over a larger volume of traffic. With reduction in the cost of service charges can be still further reduced.

Air Transport in India. Civil aviation in India is a recent development. The first attempt in this direction was made by Sir George, Lloyd while he was Governor of Bombay, by starting an air service between Bombay and Karachi. It was purely an experimental venture intended to gauge the cost of air transport, and was brought to an end after this object was achieved.

The progress of air transport in other countries had its reaction in India. The Central Government in 1928 started a few flying clubs to train pilots. Arrangements were made to construct aerodromes and landing places in some important centres. In 1929 the Croydon-Karachi air service was opened under Government patronage by the Imperial Airways, a British limited company registered in the United Kingdom. It was extended to Delhi in 1930. The transport of mails between Karachi and Delhi was entrusted to the Imperial Airways under an arrangement by which the Government of India utilised the staff and machines of the Company. The agreement was terminated in 1931, and Government planned to have a State air service. But for want of funds the idea was abandoned, and resort was made to private enterprise.

In 1933 arrangements were made with the Government of the United Kingdom and the British Airways Ltd., for the extension of the London-Karachi air service across India to Singapore as a link in the England-Australia air service. A company called the Indian Transcontinental Airways Ltd. was formed in which the British Airways Ltd., held 50 per cent of the shares, the Indian National Airways Ltd., 25 per cent, and the Government of India the remaining 25 per cent. This company operated jointly with the British Airways a weekly service between Karachi and Singapore. They also opened a bi-weekly service between Calcutta and Dacca. Under a ten-year contract with the Government of India the company started a weekly service between

Karachi and Lahore as a link with the British Airways.

Commercial aviation commenced in India in 1932 with the formation of the Tata Airlines Ltd., in Bombay, followed by the starting of the Indian National Airways Ltd., at Delhi in 1933. Messrs. Tatas had a humble beginning, the first air craft to be used seating one pilot and one passenger. By 1936 they spread their routes from Karachi to Colombo *via* Bombay. The year 1938, which saw the inauguration of the "All-up" Empire Air Mail Scheme, was a crucial year for Indian aviation. The company to benefit most was Messrs. Tatas who provided carriage for the overseas mail from Karachi to Bombay and who obtained the major share of the mail carriage payments amounting to Rs. 14½ lakhs per year. The Indian National Airways received a small mail payment annually of Rs. 3½ lakhs for carriage of Empire mail from Karachi to Lahore for distribution in Quetta, the Panjab, and N. W. F. P

When World War II broke out both companies continued to operate the Empire Air Mail Scheme and to receive payments. Since early 1942, when Japan entered the conflict, air communication within India and Ceylon became vital and every possible aid was given to the two companies to expand their routes. Aircraft were loaned by Government under Lend-Lease, all seats were fully paid for by Government whether occupied or not, and in fact both concerns became established as part of the Transport Command's network of communications in India.

By the end of the war the financial position of both companies was improved to an extent which would not have been achieved in less than 15 years of normal peace time progress. Their improved finances, their established position with Government, and the experience gained by the operation of modern aircraft acquired under Lend-Lease, placed these companies in the most favourable circumstances against new comers.

With their increased experience Messrs. Tatas have gone ahead of late. They have floated the Air India Ltd. which operates several inland lines. In 1948 they formed

the Air India Interantional Ltd. and this new company operates the Bombay-London line once a week.

The India National Airways have also extended their operations both in the length of their lines and the frequency of their services.

In 1936 was launched the Air Services of India Ltd., serving Bombay and Kathiawar. The Company was soon carrying 70 per cent of the total air passenger traffic in India. But owing to the economic factors involved the Company did not pay its way and its services were suspended in 1940. Since 1946, however, it has resumed operations.

After World War II there was a boom in aviation. Several companies were floated to operate air transport in India. Capital flowed in and aviation shares rose very high. The more important among the new companies are the Bharat Airways Ltd., started by the Birlas, and the Dalmia Jain Airways Ltd., sponsored by Mr. Ramkrishna Dalmia.

Towards the end of the war the Government of India instituted an Air Transport Licensing Board to allocate route licences for inland air transport. One of the functions of the Board is to eliminate unhealthy and wasteful competition.

The rush of capital, the rapid formation of so many aviation companies, and the keen competition for route licenses, have resulted in the scrapping by Government of the Post-war Subsidisation Plan.

In the opinion of experts an aviation company, to operate economically, must have sufficient route mileage to employ a reasonable fleet (say 8 to 10) of aircraft to that fleet's capacity, and that each unit of the fleet must operate a minimum of 1,500 hours per annum. There is in India today a route mileage of about 7,000 miles productive of traffic. Much of this route mileage terminates in foreign territory, i.e., Pakistan, Burma and Ceylon. Such routes are open to reciprocal operation, which means the halving of the traffic potential for the Indian companies. On this

view the number of aviation companies now in India is in excess of what the route mileage justifies. The fact remains that the public is not, and will not for some time to come, be sufficiently air-minded to avail itself of the facilities for air travel.

However, it must be stated that any decrease in commercial air transport in the country will be detrimental to defence. The air power of a nation consists not only of its "Armed Air Forces" but also of its mercantile air fleet, aircraft production, and the maintenance organization behind both. India is obviously weak in all the three essentials.

A grim lesson taught by the last war is that air power is the deciding factor in modern war. Man's conquest of the air is yet in its early stages. The air arm will in course of time gain more in its might and stretch. A country that neglects it will do so at its own peril.

Foreign Companies. India's geographical position in the world makes her a pivot in international and transcontinental air transport. To three European imperial powers she is indispensable in their air communications with their colonies and dominions in the East. Before World War II the British Overseas Airways Corporation had a service between London and Australia through Karachi, Jodhpur, Allahabad, and Calcutta. A French line, the Air France, operated a line from France via India to French Indo-China; and a Dutch company, the Royal-Dutch Airlines, similarly operated through India a service between Holland and Java. All these services, interrupted by the war, have since been resumed. Furthermore, after the war, in view of the key position of India, the number of foreign aviation companies, particularly American companies, operating through India have strikingly increased.

The project of post-war development of civil aviation in India lays down a 10-year programme of aerodrome construction costing Rs. 5½ crores. A network of 111 aerodromes and landing places is proposed to be constructed, 78 of which will have night flying facilities.

Aircraft Manufacture. The increased demand for aircraft caused by the outbreak of World War II led to the

establishment of the Hindustan Aircraft Company at Bangalore with a capital of Rs. 40 lakhs, later increased to Rs. 75 lakhs. The shares of the Company were subscribed to by Mr. Walchand Hirachand, the Government of India, and the Government of Mysore. The Company's factory and equipments were taken over by the Government of India for the duration of the war. The Company mainly does assembling and repair work and it turned out India's first aircraft in 1941.

CO-ORDINATION OF TRANSPORT

In recent years there has been sharp competition between various modes of transport, the keenest being between rail and road. The increased road transport is due to the advantages which this mode of transit possesses and which have already been mentioned, and also to the larger number of motor vehicles that have come into use.

Competition beyond a certain stage results in loss and economic waste. Overlapping is unproductive, as it means that two sets of capital are simultaneously seeking remuneration when one is enough. Duplication of transport might lead to carriages running without traffic to their capacity. Competition in transport generally makes the competitors unmindful of the safety and comforts of passengers. The small profit, or may be dead loss, consequent upon excessive rivalry might prevent the establishment of transport undertakings on a sound basis. All this will be detrimental to the community.

No doubt, competition has its advantages; but excessive competition, especially between rail and road, is not to the best interests of the public. Co-ordination of the means of transport, therefore, is an economic necessity. It implies the elimination of wasteful competition from:—

(1) different modes of transport, e.g., railways and roadways;

(2) various enterprises engaged in the same mode of transport, e. g., rate cutting between two railway companies, or two bus companies, or two shipping companies.

The different kinds of transport have different spheres, as already stated; that difference should form the basis of co-ordination. To put the point in another way, there cannot be co-ordination between two kinds of transport in the same sphere if one has marked advantages over another. For example, railways are more suited than buses for the transport of heavy goods over long distances; therefore the question of co-ordination of railways and buses with regard to such traffic does not arise. It is a kind of traffic which falls within the proper sphere of railways. The need for co-ordination arises only when there is deadly competition in the same sphere between two different kinds of transport or between two units of the same kind. The principle of co-ordination is that the different kinds of transport are complementary to one another and that each should be assigned to its proper sphere.

TYPES OF CO-ORDINATION

(1) *Voluntary Co-ordination.* This takes place between several transport agencies on a footing of equality, each unit maintaining its identity. The advantages of this manner of co-ordination are that it stresses the complementary character of transport systems and eliminates unhealthy competition. Hence mutual facilities could be provided at minimum cost, e.g., the use of common booking offices, stations and rest houses, the dovetailing of time tables, etc. Its defect is the natural difficulty of effecting and maintaining it owing to mutual suspicions and jealousies.

(2) *Co-ordination Through Dependence.* Co-ordination may be brought about by one transport system controlling others, e.g. the railways controlling other means of transport. It would mean the domination of all inland transport by one kind of transport and the evils that accompany a monopoly. It would doubtless be prejudicial to the public interest.

(3) *Statutory Co-ordination.* This kind of co-ordination is effected compulsorily by law by setting up a body to regulate the activities of persons or companies engaged in different modes of transport. It would eliminate competition altogether and bring in a virtual monopoly, and the resultant

exploitation of consumers. If the drift to monopoly can be checked by the State, statutory co-ordination is better than the other kinds.

History of Rail-Road Co-ordination in India. There was considerable competition between rail and road transport in India before 1939. According to an estimate by Messrs. Mitchell and Kirkness in 1933, the loss to the railways from the competition was Rs. 190 lakhs a year. The Wedgwood Committee computed it at Rs. 4½ crores in 1937. One of the chief reasons for this loss is that 48 per cent of the railway length has metalled roads running parallel to it. The percentage rises in the North-Western Frontier Province to 94, and in the Central Provinces to 73.

The rail-road competition made the Government of India appoint a committee consisting of two of their officials, Mr. K. G. Mitchell and Mr. L. H. Kirkness, in 1932 to suggest a solution to the problem. They recommended 1) the zoning of short distance traffic, 2) active counter-competition in respect of improvements of facilities and reduction of rates and fares, 3) operation of motor transport by railways, 4) creation of a central board of communications to deal with all kinds of transport. In pursuance of these recommendations the Government of India convened in 1933 a conference of representatives of the Provincial Governments. The principal conclusions of the conference were :—

(1) that public interest demands intelligent co-ordination between the various transport systems so that uneconomic competition may be eliminated;

(2) that certain classes of railways may be given the power to run motor bus services;

(3) that the number of vehicles licensed to ply for hire should be restricted and that greater control should be exercised over motor services for the safety and convenience of the public;

(4) that every encouragement should be given to the development of rural motor services;

(5) that there should be uniformity in the Provinces in motor taxation and in laws relating to motor vehicles;

(6) that suitable machinery should be established at the Centre and in the Provinces to bring about co-ordination of transport.

A further advance towards the co-ordination of rail and road transports was made by the creation of the Central Transport Advisory Council which held its first meeting in 1935. In 1937 the Wedgwood Committee had for consideration, among other matters, the question of co-ordinating the rail and the road transports. The Committee reported that the regulation of transport by Provincial Governments was inadequate and that these should regulate transport in accordance with uniform principles laid down by the Central Government: that licenses should be issued to public motor carriers with due regard for the number needed; that passenger services of motor vehicles should be regulated by a system of route licensing and time tables; and that fares should be fixed by the Provincial Governments. The Committee was of the opinion that the taxation of motor vehicles and the control of motor traffic would place the competition between rail and road on an equitable basis and promote co-ordination of the two kinds of transport. The Committee also recommended participation in road services by the railways, and that to this end the railways should be empowered. In 1937 the Motor Vehicles Act was amended to enable the Government to control the number of motor vehicles in operation, the routes and the areas in which they ply, the bus timings, and the rates and fares of motor transport.

Shortly after the amended Act came into force the conditions brought about by World War II dislocated the country's transport. All buses were requisitioned by the Government for military purposes, and therefore bus services had to be stopped. The Act thus had no occasion to work.

In October, 1945, the Transport Advisory Council recommended to the Provinces that the scheme of rail-road

co-ordination should apportion to each kind of transport its proper sphere ; that in the case of motor passenger traffic 50 miles should be regarded as its free zone, and in the case of motor goods traffic, 100 miles, that railways and steamers should be free to object to the issue of permits for motor passenger services on routes exceeding 50 miles in length and motor goods carrying services on routes exceeding 100 miles in length.

For effective co-ordination of rail and road transport in the sphere of passenger traffic the Transport Advisory Council also recommended the formation of joint rail-road companies with the participation of Provincial Governments. This proposal has been accepted by a majority of the provinces in several of which it has been put into effect.

So far there have been no proposals to include water transport and air transport in a comprehensive transport policy, probably because the competition from them has not become acute. From a well co-ordinated scheme, however, these cannot be excluded in the long run.

PART V
Theory of Exchange

BASIC CONCEPTS IN THE THEORY OF EXCHANGE

In Exchange, as everywhere else, we have to use a large number of technical words. Every word has its own peculiar meaning in a science. For instance, the word market means one thing in common language, another in Economics and yet another perhaps in the science of Jurisprudence. In Economics our difficulty is greater and the chances of misunderstanding are numerous because we frequently make use of words borrowed from the market-place. Other sciences coin their own words whenever it is felt that the common word does not clearly indicate the meaning that it should have in the context of scientific discussion. The science of Economics too has coined some such words; but their number is limited. In most cases we depend on the words in common use. And that constitutes a fruitful source of confusion. Many controversies in Economics can be traced to the fact that different economists use the same word in different senses. Much of the controversy on the Theory of Money or on those of Rent and Interest could have been avoided if the economists had been more careful about the meanings of the words they use.

It is impossible to define a term in the strictly logical manner. Human knowledge is limited and language often fails us. But, if it is not possible for us to be quite exact, it is at least possible for us to be less vague. Take for instance, the word Cost. It does not mean the same thing as expenses. The latter term excludes the remuneration of the employer's own work, the former includes it. Cost of production is not the same thing as the cost of manufacture of a thing. Manufacture connotes the creation of form utility only; production means the creation of utility, and would therefore include any and every kind of utility. Cost of production may mean only the cost of selling; cost of manufacture never means that. When it is said that price in the short period always equals the marginal cost of production it causes doubt in the minds of those who think that cost of production connotes the cost of manufacturing

a commodity. For those who do not confuse production with manufacture the statement is clear and universally correct.

It is therefore not mere pendency to define terms. One is not fussy about terms when he spends time in examining some prevailing definitions and giving his own. Let us therefore begin by defining some basic concepts.

Cost of Production. There are many classifications of cost of production. Even the word cost has been used in very many senses by economists. Here an attempt has been made to give the most important classifications of cost of production.

Money Cost and Real Cost. This classification has been given by Marshall. According to him money cost measures the amount of money which a producer spends in producing a particular commodity. Suppose a producer spends 1,000 rupees in the production of 100 units of a commodity, then 1,000 rupees is the money cost of producing 100 units of that commodity. It measures (1) the amount of money spent in purchasing raw materials, (2) wages paid to labourers, (3) interest paid on capital, (4) salaries paid to the organiser, (5) normal profits of the entrepreneur, (6) depreciation charges for wear and tear, (7) insurance charges, and (8) taxes paid to the government.

Real Cost of Production, according to Marshall, is a 'social cost' and measures "the exertions of all the different kinds of labour that are directly or indirectly involved in making it; together with the abstinence or rather the waiting required for saving the capital used in making it; all these efforts and sacrifices together will be called the real cost of production of that commodity."* Some works are more irksome, difficult and painstaking and, therefore, involve more real sacrifice. A work in which health of the labourers is adversely affected involves more real cost as compared to that in which their health is not so affected, in spite of the fact that the money cost of both of them may be the same.

*Marshall, *Principles of Economics*, pp. 338—39.

Throughout the classical discussion the underlying idea is that the money cost of production also measures the real cost of production. They believed that under perfect competition, payment to a labourer must be equal to the sacrifice made by him and, therefore, also to the real cost of production. But this was a mistaken notion of the Classics and it is seldom true in real life.

Modern Economists, however, use the term cost in the sense of 'opportunity cost' or 'transfer earning'¹, that is, the amount of money which a man forgoes in order to do a particular job. For instance, a carpenter can either make chairs or tables out of a log of wood. But supposing he decides to make tables out of that log of wood, then the cost of tables is the price that he would have got by selling chairs.

Marginal Cost and Average Cost. Marginal cost is defined as the cost of the last unit of a commodity produced. For instance, if a producer produces one hundred units of a commodity, then the cost of the hundredth unit is the marginal cost of that commodity. But it is better to define marginal cost as the addition made to the total cost by producing one extra unit of a commodity. For instance, suppose a man produces one hundred units of a commodity and his total cost is, say, two hundred rupees only. Now if he produces one more unit, that is, one hundredth and first unit and the total cost mounts up to rupees two hundred and three, then this additional three rupees is the marginal cost.

Average cost is the average of the total cost and is determined by dividing the total cost by the number of units produced. In the above instance, when a producer produced one hundred units of a commodity, his cost was two hundred rupees. It means the average cost was two rupees.

The following table will show the method of finding out the average and marginal costs of production :—

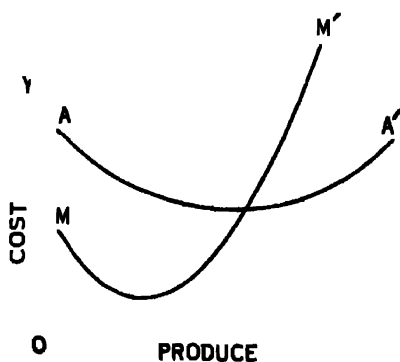
¹ For example, Mrs. Joan Robinson.

| Units produced | Total cost | Marginal cost | Average cost |
|----------------|------------|---------------|--------------|
| 1 | 10 | | 10 |
| 2 | 18 | 8 | 9 |
| 3 | 24 | 6 | 8 |
| 4 | 28 | 4 | 7 |
| 5 | 35 | 7 | 7 |
| 6 | 48 | 13 | 8 |
| 7 | 63 | 15 | 9 |
| 8 | 88 | 25 | 11 |

This table clearly shows that the marginal cost is the addition made to the total cost by the production of one more unit and average cost is the total cost divided by the number of units produced.

One very important fact which also becomes clear from this illustration is the relationship between the marginal cost and the average cost of production. In the beginning both of them are falling, but the marginal cost falls at a greater speed than the average cost. When the fifth unit is produced, both the marginal and the average costs are equal. After that both of them begin to rise. But the marginal cost increases at a faster rate than the average cost. The relationship between the average and the marginal costs is very important to remember. The following diagram shows their mutual relationship :

In this diagram, AA' is the average cost curve and MM' is the marginal cost curve. After the point of intersection the rise in the marginal cost curve is greater than the rise in the average cost curve.



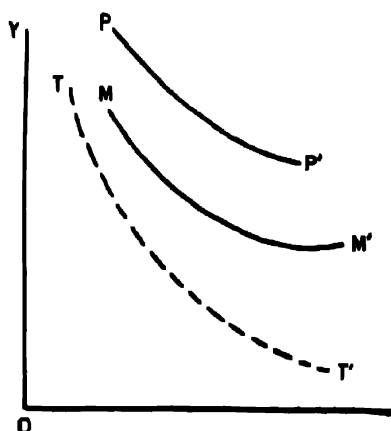
Here it may also be pointed out that the *marginal cost curve passes through the lowest point on the average cost curve.*

This fact is universally true and is evident from the diagram given above.

It will not be out of place here to remember that whenever profits and losses are to be measured, *the relationship between the price curve and the average cost curve should be seen.* The marginal cost curve does not help directly in the determination of profits or losses.

Cost of Production and Cost of Manufacturing. Some economists make a distinction between the cost of manufacturing and the cost of production of a commodity. Cost of manufacturing is the manufacturing cost of a commodity and is the sum-total of both fixed and circulating costs of that commodity. Cost of production, however, includes not only the cost of manufacturing—that is, the fixed and circulating costs—but also the cost of transporting the commodity from the place of manufacture to the market. This distinction shall be of very great use in the study of market price in the short period. The diagram given below makes this distinction very clear.

[In this diagram MM' = cost of manufacturing, TT' = Average cost of transportation, and $MM' + TT' = PP'$ = Average cost of production.]



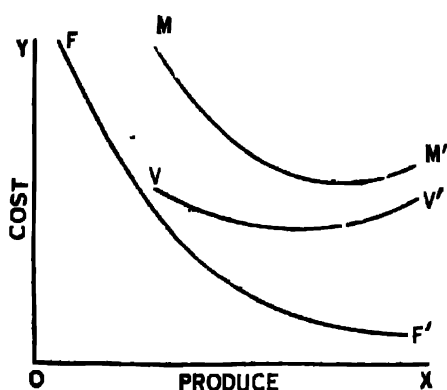
Fixed and Variable Costs. These costs are also known as fixed and circulating or supplementary and prime costs.

Total fixed cost as of a plant, durable machinery and managerial staff, does not change at all as output expands. The total interest charged on the investment in plant and durable machinery, for example, is the same no matter how intensely the plant is used, which means that the

average fixed cost (*AFC*) per unit declines as output increases and is in inverse ratio to this increase. That is, if output is doubled, the fixed cost per unit is reduced by one half; and if the output is quadrupled, the fixed cost is reduced by three-fourths. Since fixed cost does not increase as output increases or in other words, as fixed cost per unit of output declines steadily, this is a factor which induces industrialists to expand output.

Average variable cost as of labour and raw material, varies directly with the amount of output, but seldom at the same rate as the output. Variable cost per unit of the output will ordinarily be very high if the plant is producing only a small proportion of its potential output. Expansion of small output will bring declining variable costs until the lowest point is reached. From that point on, variable cost per unit of output, (*AVC*) will rise rather sharply as more and more labourers are crowded into the plant, and as plant is used more intensively in other ways.

Average aggregate cost is the sum-total of average fixed and average variable costs. Since fixed cost per unit of product declines very sharply at first and average variable cost somewhat less sharply, the curve of average aggregate cost at first slopes downward less steeply than the curve of average fixed cost and more steeply than the curve of average variable cost.



FF' = Average Fixed cost curve

VV' = Average variable cost curve

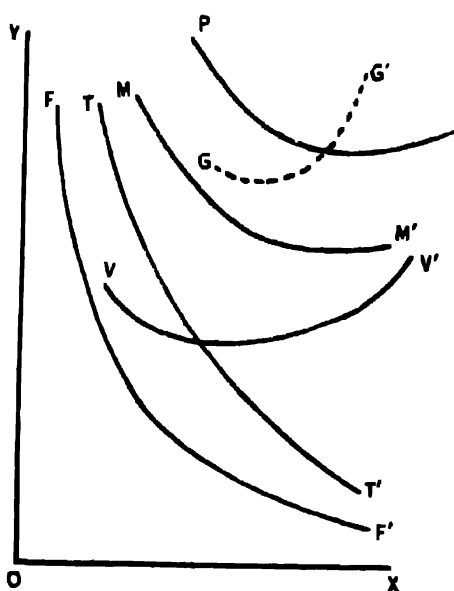
MM' = Average total manufacturing cost curve

Average Fixed cost goes on decreasing as more is produced.

Average Variable cost first declines and then rises

Average Total cost is the sum total of the above two costs.

From the foregoing analysis of the cost it will become clear that the average cost of manufacturing a commodity comprises of average variable cost and average fixed cost. If to the average cost of manufacture is added the average cost of transport, the aggregate is known as the average cost of production. The marginal cost curve will pass through the lowest point on the average cost curve as is shown in the diagram given below :—



In this diagram VV' is the variable cost per unit, FF' is the average fixed cost, TT' is the cost of transportation per unit, MM' is the average cost of manufacturing, PP' is the average cost of production and GG' is the marginal cost of production.

Marginal Revenue, Average Revenue and Price. Marginal revenue is the addition made to the total revenue by selling

one more unit of a commodity. For instance, when a man sells fifty units of a commodity and gets two hundred rupees, and when he sells fifty one units and gets two hundred and five rupees, then five rupees is the addition to the total revenue made by selling one more unit of a commodity and is, therefore, marginal revenue.

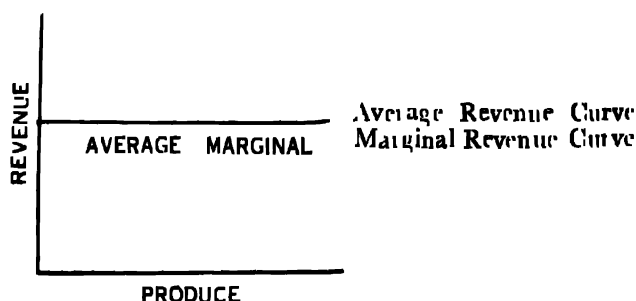
Average revenue is the total income from the sale of a commodity divided by the number of units sold. For instance, if by selling one hundred units of a commodity a seller gets ten thousand rupees, then average revenue is one hundred rupees.

Price is the worth of a commodity expressed in terms of money. For instance, if you are prepared to give ten rupees

for a commodity, then the monetary worth of that commodity is ten rupees and therefore, ten rupees shall be said to be the price of that commodity. *It should be remembered that average revenue is the same thing as price.* These two terms can be used interchangeably.

As we have already pointed out it is to be remembered that profits and losses are measured as difference between average revenue and average cost. Marginal revenue or marginal cost should never be employed for this purpose.

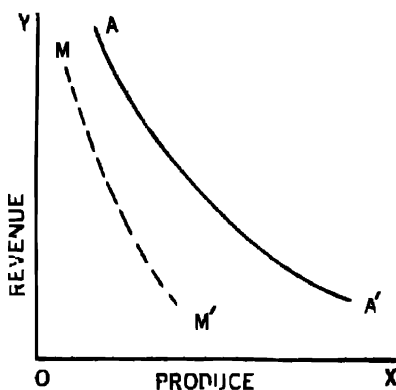
It may also be pointed out that average revenue and marginal revenue curves shall be the same under perfect competition. There the curve shall be horizontal straight line as shown in the diagram below.



This is so because under perfect competition, the producer can have neither profits nor losses. The price of his commodity will be equal to the average cost of production. And at that price he can sell any number of units of the commodity he likes. It means that for every additional unit of the commodity he sells he will get the same price. And if he gets the same price for every unit of the commodity there will be no difference between the average revenue and the marginal revenue and the curve representing these two revenues will be one and the same. Since for every unit he gets the same price, the shape of the curve will be horizontal. This is the reason why it is said that the average and the marginal revenue curves under perfect competition are represented by a horizontal straight line.

But under imperfect competition, the average and marginal revenue curves shall both be sloping downwards, but

the marginal revenue curve shall be steeper (as shown in the diagram given below) This is so because when a monopolist sells more, he has to reduce the price of all the units of his commodity. The loss thus suffered is not only of marginal revenue (additional units sold) but also of the average revenue (of all the units sold). Supposing a monopolist sells 1,000 units of a commodity at the rate of 200 rupees per unit. Then his total revenue will be rupees 200,000. Now he decides to sell 1,100 units and he has to reduce the price to rupees 190 per unit. His total revenue will then be only Rs. 209,000. This means that for his extra 100 units he gets only Rs. 9,000 despite the fact that the commodity is being sold at the rate of Rs. 190 per unit. This is because he has to suffer a loss on his previous 1,000 units also at the rate of ten rupees per unit. That is why the marginal revenue curve is steeper than the average revenue curve, showing thereby that the marginal revenue decreases at a faster rate than the average revenue when more units of a commodity are sold under monopoly.



In this diagram AA' is Average Revenue curve and MM' is Marginal Revenue curve.

Short and Long Periods. Periods are generally divided into two classes, short and long, according to the adjustment of supply to the demand of the commodity. Mr. J. K. Mehta, for instance, defines long period as the "period of time that is required by a production unit to complete all the adjustments that are necessitated by the forces acting on it *at any given time.*" All periods of time, of duration shorter than this, he calls short periods. In other words, according to Mr. Mehta, the supply of a commodity cannot adjust itself to de-

mand fully in a short period. When adjustments are completed the period becomes long period. For instance, if within a period of time the supply and demand of a commodity are hundred each they are in equilibrium. Now let the demand increase to two hundred. In the short period the supply cannot be equated to the demand of the commodity. The period during which the supply increases to two hundred, is called the long period and all periods shorter than that are known as short periods. Here it may be pointed out that the term in economic sense has no relation to a specific period of time. It varies from commodity to commodity and also with the technique of production. In the case of some commodities, the long period may be of a few days while in case of others, the short period may extend to years.

There are, however, some economists* who classify periods into three classes (1) short period (2) short-run normal period or intermediate period and (3) long-run normal period. Short period is that in which adjustments between demand and supply cannot fully take place. Intermediate period is that in which supply can increase but only to the extent of the capacity of *existing plant and managerial staff*. Long-run normal period is that in which supply can increase to any extent and *existing plants and managerial staff can also change*. This is an attempt to subdivide the long period into two. It aids the understanding of some practical problems of the business world. In the pages that follow Mr. Mehta's two fold classification has, however, been adopted. It allows us, wherever necessary, to subdivide the long period into a suitable number of periods.

Competition. Chamberlain makes a distinction between (1) pure competition, and (2) Perfect competition. *Pure competition* is a competition free from all monopoly elements, and it prevails when following conditions are found:-

(1) the product brought and sold must be standardised i.e., identical to all sellers so that buyers shift to different sellers at the slightest change in price.

(2) There must be so many buyers and sellers in the market that purchases and sales of any of them have no effect on market price; and

*John Ise, 'Economics'.

(3) There must be no agreement as to price or quality among sellers.

The wheat market in U. S. A. from the farmers' side represents a case of pure competition where wheat is purely standardised and there are millions of sellers.

Perfect competition, according to Chamberlain, implies "an absence of friction in the sense of an ideal fluidity or mobility of factors such that adjustment to changing conditions which actually involve time are accomplished instantaneously in theory". It involves the following conditions for its existence:—

(1) All the conditions of pure competition which we have already pointed out.

(2) Besides, the buyers and sellers must be fully knowing the commodity and about the conditions of supply and demand.

(3) Conditions in the market should be such that prices will respond promptly to actual or anticipated changes in supply and demand.

(4) There must be many sellers so that there may be quick adjustment of demand and supply.

(5) There must be no friction to impede the movement of capital from industry to industry, from product to product, or from firm to firm; investment must be speedily withdrawn from unsuccessful undertakings and transferred to those which promise a profit. There must be no barrier to the entrance into a market; access must be granted to all buyers and sellers.

(6) There must be no barrier or obstacle to the exit of a firm from the market; bankruptcy must be permitted to destroy those who lack the strength to survive.

Thus we can say that one very important fact which distinguishes perfect competition from pure competition is the

existence of free mobility of factors of production in the former as against the latter*.

Stationary State and Dynamic State. Stationary state is defined as a state where consumers' preferences, technique of production and flow of resources into the industry are fixed. This is the most correct way of defining a stationary state. J. B. Clark defined stationary state as that in which population, wants of the consumers, industrial organization, supply of capital, resources and raw-material and productive efficiency are fixed. This concept of his is very artificial for population in the absolute sense can never be fixed. Deaths and births are bound to take place.

Another definition, which has been given by Marshall is better than that of Clark. Marshall defines stationary state as that state in which "the rate of flow of resources per unit of time" is constant. There are changes, but they happen in such a manner as to keep the net result the same. If there are hundred births, then hundred people die so that the total population remains the same. So Marshall's definition is better than that of Clark. But it is better to accept the definition given in the beginning because it includes the important points of both the definitions.

Dynamic State is that state in which things are changing. Population, wants, or consumers' preferences, flow of resources, technique of production etc, all are changing. This state conforms to the conditions in real life.

Stationary and Dynamic States and Profit. In the stationary state since consumers' preferences are fixed, the demand curve is also fixed. The flow of resources and the technique of production are constant and, therefore, the supply curve is also fixed. Since there exists perfect knowledge** in such a state, equilibrium of demand and supply exists from the

*See in this connection Mr. J. K. Mehta's view. He talks of perfect competition only and his perfect competition is the same as Prof. Chamberlain's pure competition. See Prof. Mehta's *Advanced Economic Theory*, pp. 76-77

**By perfect knowledge is meant complete knowledge of all the changes that are taking place.

very beginning. This adjustment never changes because the conditions which give rise to such a state of equilibrium are themselves fixed. *The result is that in the stationary state profits and losses do not arise.*

In the dynamic state, on the other hand, since all the conditions are changing, the adjustment never continues over a period of time. The result is that accidental gains and losses arise. The existence of accidental gains and losses is an important point in which the dynamic state differs from the static state.

We have already pointed out that profits and losses are measured from average cost of production. When there is neither profit nor loss, the price is equal to average cost of production. But when there are profits and losses, price is equal *only* to marginal cost and *not* to average cost. *That is why in the dynamic state the point of equilibrium is given by the equality of marginal cost and price; while in the stationary state average cost is equal to marginal cost which is also equal to price.* The fact is very important and should help us in understanding the theory of value which is discussed in subsequent chapters.

Static and Dynamic Equilibria. A state of equilibrium is defined in terms of non-expansion or non-contraction within the period of time concerned. If we think of the equilibrium of a firm, it can be said to be in equilibrium when it shows no tendency to expansion or contraction within the period under consideration. Whenever we talk of equilibrium, we must think in terms of a period of time. The period may be of any length, it may contract to a point of time or may extend to eternity. But these are two limiting cases. Anyway, the fact to be remembered is that equilibrium must necessarily be associated with a period of time.

Equilibria are of two types—(1) static and (2) dynamic. When an equilibrium maintains itself outside the period of time, it is known as static equilibrium. If, however, it fails to maintain itself outside the period of time it is called dynamic equilibrium.

Suppose, for instance, that one day is the period of time under consideration. On that day there are some forces

of demand and supply acting on a production unit and they are in equilibrium. If this equilibrium persists not only on that day but also continues on the following day, it constitutes a case of static equilibrium. But in case this equilibrium is disturbed at the end of the day, it is known as dynamic equilibrium.

It will, however, not be out of place to mention that what is static equilibrium with reference to one period of time may become dynamic with reference to another period of time. If we take one day as the period of time, the equilibrium which maintains itself on the second day shall be called static equilibrium. But if we take two days as the period of time, then the same equilibrium becomes dynamic if it is not able to maintain itself on the third day. So the period of time is always a very important consideration in the study of equilibrium.

Equilibria and States. We know that there are two states (1) stationary state and (2) dynamic state and two equilibria, (1) static and (2) dynamic. Are then we justified in saying that static equilibrium is associated with stationary state and dynamic equilibrium with dynamic state? No, this generalisation is not true. There are some economists who maintain this view but they are not correct.

In a stationary state where knowledge is perfect, as we have already pointed out, the equilibrium shall be static and this equilibrium shall never change. *So we can say that stationary state is always associated with static equilibrium.* But in dynamic state, we can have both the equilibria—static and dynamic. In the dynamic state in short period, there exists dynamic equilibrium for during short period full adjustments are not possible. But in very long period under dynamic state, we may imagine a condition where unit has sufficiently developed, so that we may have static equilibrium. But static equilibrium in the dynamic state is a purely mental phenomenon, it is hardly realised in real life.

Market. In popular language the term market means an *actual place* where buyers and sellers assemble to carry

on purchases and sales. But economists use this term in a different sense. Unfortunately, there is no unanimity among economists as to its precise meaning and there are various definitions of this term. For instance, Cournot means by the term market "not any particular market-place in which things are bought and sold, but the whole of any region in which buyers and sellers are in such free intercourse with one another that the prices of same goods tend to equality easily and quickly¹." Jevons is of opinion that the term market "has been generalised so as to mean any body of persons who are in intimate business relations and carry on extensive transactions in any commodity²". Sidgwick defines a market as a body of persons in such commercial relations that each can easily acquaint himself with the rates at which certain kinds of exchanges of goods or services are from time to time made by the others, while Ely says that market means the general field within which forces determining the price of a particular commodity operate. Marshall gives no definition of his own and Prof. Pigou seems to accept the definition of Jevons.

These definitions clearly bring to our mind the various interpretations of this term. While to Sidgwick perfect knowledge among buyers is necessary, although they may not have competition, to Ely competition is absolutely essential. Again, while Scager talks of a 'place' and Cournot of a 'region', Jevons talks of only buyers and sellers. These differences are too great to be ignored and, therefore, it is desirable if we find out the various salient features of the definition of the term market and discuss them one by one and see which of them are necessary for our definition of market.

The salient features, as found in the above definitions are (1) place or region, (2) buyers and sellers, (3) commodity or commodities, (4) competition, (5) one price, and (6) perfect knowledge. Let us take these points one by one and discuss whether they are necessary for our definition of market or not.

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1. Quoted by Marshall, *Principles of Economics*, p. 324
 2. Jevons, *Theory of Political Economy*, pp 84-85
 3. J. K. Mehta, *Advanced Economic Theory*, p. 69

(1) *Place or region.* In ordinary language whenever we think of market we think of a place where buyers and sellers gather together to purchase commodities offered for sale.

A place or a region is not a necessary ingredient of a market. In modern times grading and bampiling processes have so much developed that buyers and sellers seldom meet at any place. For instance, Indian merchants get goods from England, but English sellers and Indian purchasers seldom meet at any place. So place is not a requisite of the definition of market.

(2) *Buyers and sellers.* Buyers and sellers are both necessary to form a market. Without them no business can take place.

But sometimes question arises about the number of buyers and sellers and also about their location. How many buyers and sellers should there be to form a market? Can one buyer or seller form a market? Again, where should these buyers and sellers be located? Should they exist in one country or one continuous region? The answer is that the number of buyers and sellers have no significance. There may be one buyer and seller or more. Again, locality also has no bearing on the matter. Wherever there are buyers and sellers of a commodity they constitute one market.

(3) *Commodity.* There is lot of controversy over this. Should we consider one commodity as constituting one market or should we include all its substitutes? For instance, should we say that all the different brands of tea form one market or different brands form different markets? The right answer is that two different brands should be taken to constitute two markets unless they are perfect substitutes for each other so that the consumer is indifferent as to which one he consumes. Benham adheres to this view when he says that "Two units do not really belong to the same commodity unless they are perfect substitutes that is unless every potential purchaser would be quite indifferent as to which of the two he received for his money."*

*Benham, *Economics*, p. 24.

(4) *Competition.* Competition is not necessary for the existence of a market. It may exist or may not exist. In a perfect market the competition shall be cent per cent. In an imperfect market, competition would not be perfect and in case of monopoly, competition would be zero. So competition is not essential for the existence of market.

(5) *One Single Price.* It is necessary that in one market there must be only one price. The shift of demand ensures that buyers shall not have to pay different prices. Similarly, the shift of supply ensures that the buyers shall not offer different prices to the sellers. Even in case of monopoly, the monopolist charges one price in one market. So in a market only one price shall rule.

(6) *Perfect Knowledge.* It is not necessary that there must be perfect knowledge for the existence of a market. In a dynamic state buyers do not have perfect knowledge. But we cannot say that in that state markets do not exist.

This discussion tells us that market signifies a state in which a commodity has buyers and sellers and there is only one price ruling for that commodity¹.

Wide and Narrow Market. There are some economists who use the term wide and narrow market and also point out the characteristics which a commodity should possess in order to have a wide market. But this whole discussion is redundant because the term market is not associated with the idea of area. "It is a state of affairs and to speak of a state as being wide or narrow is meaningless indeed".²

¹ Prof. J. K. Mehta has given a similar definition of the term 'market'. To him "The word market signifies a state in which a commodity has a demand at a place where it is offered for sale." *Vide his Advanced Economic Theory*, p. 72. Instead of using the words buyers and sellers, he prefers to use the words 'demand' and 'sale' because he says that "many economists are buyers and sellers of books but they would not like to be called markets." *op. cit.*, p. 72. But there is no difference in substance between his definition and the one which we have adopted.

² *op. cit.*, p 73.

CHAPTER XXXI

GENERAL STATEMENT OF THE THEORY OF VALUE IN PERFECT COMPETITION

The price of a commodity in a market is determined by the forces of demand and supply—demand for a commodity and supply of a commodity. The demand for a commodity is a measurement of consumer's preference and is, therefore, dependent upon the satisfaction or utility which he derives by the consumption of that commodity. Supply, on the other hand, is dependent upon the cost of production of that commodity and it signifies the producer's sacrifice. These two forces are like "two blades of a pair of scissors" both of which are necessary for cutting.

The consumers try to pay as little as possible for a commodity and never pay more than the money equivalent of the satisfaction which they derive from it. That is the highest limit above which prices can never rise. The producers, on the other hand, try to charge as much as possible. So there is "higgling and bargaining" and the price is ultimately determined at that point where demand and supply are in equilibrium, that is, at the point where the amounts demanded and offered for sale are equal.

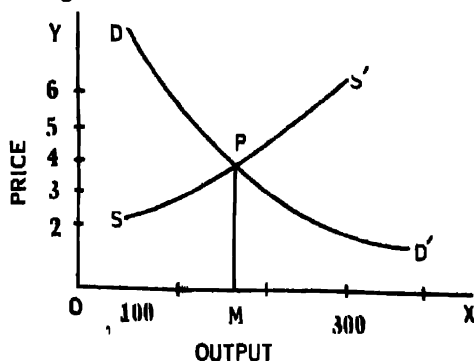
At a price higher than the equilibrium price, the supply of the commodity would be more and the demand less, resulting in a surplus in the market. On the other hand, at any price below the equilibrium price, the demand of the commodity would be greater and the supply less, so that the demand of the consumers would not be fully satisfied. Therefore, ultimately the price must be determined at that point where the demand for and the supply of the commodity are in equilibrium.

To take an illustration, we suppose that the condition of demand and supply of wheat in a particular market on a particular day and time are as follows :—

| Price (Rs. per maund) | Demand | Supply |
|-----------------------|--------|--------|
| 6 | 50 | 300 |
| 5 | 100 | 200 |
| 4 | 150 | 150 |
| 3 | 200 | 100 |
| 2 | 500 | 70 |

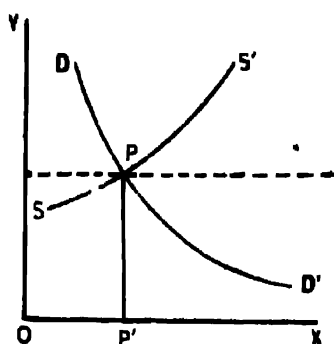
Here when the price is four rupees per maund, the demand and supply of wheat are both equal to 150 maunds. Hence the price would be determined at four rupees per maund. If the price were below four rupees, the demand would be more and the supply less so that a large part of the consumers' demand would remain unsatisfied. This would cause a great competition among the consumers to purchase and the price of the commodity would be pushed up and ultimately shall come to four rupees per maund where the demand of the consumers would be fully met. On the other hand, if the price were above four rupees, there would be more supply than the demand for the commodity, resulting in a surplus in the market. This would result in a more intensive competition among the producers anxious to sell off their stocks. The price would therefore come down till it stood at four rupees per maund, where the supply ceases to be in surplus, being just equal to the demand for the commodity. So the price would ultimately be fixed at four rupees per maund.

The above example can be illustrated by means of a diagram :



In this DD' is the demand curve and SS' the supply curve. They meet at point P . So PM is the price and OM the quantity demanded.

It can also be illustrated by another diagram with the use of the marginal revenue curves.

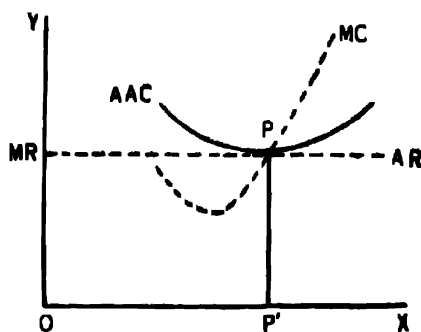


Demand and supply curves determine price

DD' – Demand curve of the whole market.

SS' = Supply curve of the whole market.

PP' Market price.



Adjustment of individual producer's output to price

AAC = Average total cost

MC = Marginal cost

MR, AR Marginal and Average Revenue curves.

PP' Price per unit which the producer will get for his commodity.

Here in the first diagram market condition of demand and supply has been shown. In the second diagram the condition of the individual producer has been shown. It is to be noted that in perfect competition an individual producer's average cost and marginal cost are equal to the average and marginal revenues at the point of equilibrium. Thus, the producer makes no profit and suffers no loss. He sells his commodity at the market price and, therefore, the length of PP' in both the diagrams is the same.

CHAPTER XXXII

VALUE IN PERFECT COMPETITION SHORT PERIOD STATIONARY STATE

The short period price, which is known as market price, is the price which prevails at a particular time. And by definition, a short period is that period in which adjustments cannot take place fully, the supply of a commodity cannot change to the same extent as the demand for it at a given price. The result is that the supply or the cost of production curve plays a secondary role in the determination of price at this stage, the demand playing a more important role. Hence if the demand for the commodity is more, the price of that commodity will also be high and if the demand is less, price will also be less.

In the stationary state as already defined, the demand and the supply curves are fixed. Since there is perfect knowledge, equilibrium of demand and supply exists from the very beginning. And this equilibrium never changes because the conditions which give rise to such a state of equilibrium are themselves fixed.

Because of this peculiar nature of the stationary state the condition of equilibrium in the short period will be the same as that in the long period under similar conditions. That is, the following conditions will operate :—

1. There will be only one price ruling in the market and all the producers will be selling all the units at the same price.
2. The producers will neither make profits nor will they suffer losses.
3. Every firm will be producing at the same price and by following the law of substitution will become optimum firm.

*By perfect knowledge we mean that the producers know fully well the consumers' preferences and also the flow of resources into the industry.

4. Although the price ruling in the market will be equal to the cost of production of each and every firm, yet the price will not be determined by any one of them. The price will be determined by the inter-action of the total production of all the firms and the total demand of all the consumers.

Hence, in reality, there can be no distinction between the short period and the long period in the case of the stationary state. Such a distinction is, however, applicable to the case of the dynamic state.

For an example and diagrammatical illustration of the market price as also of the equilibrium condition of individual firms reference may be made to the diagrams and example given in the previous chapter.

CHAPTER XXXIII

VALUE IN PERFECT COMPETITION SHORT PERIOD DYNAMIC STATE

In the short period perfect competition but under dynamic state, the condition of equilibrium will materially differ from the condition under stationary state. Under dynamic state forces behind demand and supply can change. Therefore, equilibrium will not be a static equilibrium but a dynamic one. This will also be so because of short period. Under perfect competition dynamic state we may have static equilibrium besides dynamic equilibrium provided the period is a long one. But when the period is short we can have only dynamic equilibrium.

The following are the peculiarities of the dynamic state: —

1. Under this state producers will be suffering losses and having profits.

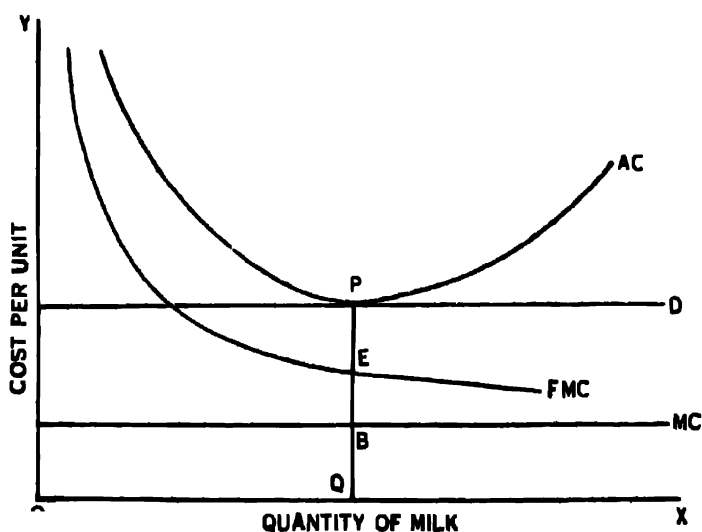
2. All the producers will not necessarily be selling the commodity at the same price, though generally they will be selling at the same price.

3. It is not necessary that the average revenue which a producer gets must be equal to its average cost of production. This conclusion arises from the first condition.

Cost of Production and Price. In the short period under dynamic state it is possible for a concern to make a profit or suffer a loss. Since the supply cannot be adequately changed and the demand plays an important part, therefore, the price would shoot up with an increase in the demand. On the other hand, if the demand was to go down, the price would fall. As such, the producer can earn a profit by selling the commodity above his cost of production or suffer a loss and sell below his cost of production.

If a producer sells his commodity below his cost of production and suffers a loss, it is worth enquiring: How much below the cost can he afford to go? The extent of the loss that a producer would suffer depends on the nature of the commodity. If the commodity is perishable like milk, and he is unable to store it, he would be prepared to suffer

a loss to the tune of his total cost of manufacturing, that is, his prime and supplementary costs. But he must have his cost of marketing. For if he was not to get his cost of marketing he would not bother to send milk to the respective customers, and would prefer to throw it away. Suppose that when a certain amount of milk is produced the prime cost of a unit is four annas and its supplementary cost three annas. The cost of manufacturing comes to seven annas per unit. The cost of marketing, let us say, is one anna per unit. Then the total cost of production come to eight annas per unit. Now if the worst happens and the demand for milk goes down very much, the producer will be prepared to sell his commodity even at one anna per unit assuming that the marketing cost is constant. But he will not be prepared to sell milk at a price below his cost of marketing, that is one anna, because if the price were to fall below one anna per unit, he would stop selling milk and throw it away. The case is illustrated below by means of a diagram:—



MC. is the marketing-cost curve.

FMC is the marketing-plus-fixed-cost curve.

AC. is the aggregate-cost curve.

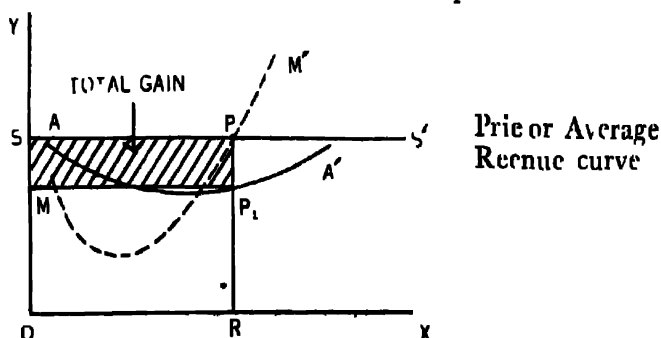
D is the demand curve.

In equilibrium, the price would be PQ of which BQ would cover the cost of marketing one unit of milk,

EB would cover the fixed cost of manufacturing one unit and PE , the variable cost of one unit. The lowest level to which the demand curve can fall is BQ i.e., the MC level. If it fell below it milk would not be sold.

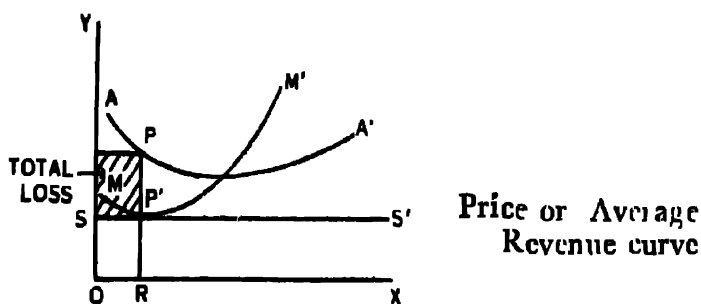
However, in the case of those commodities which are non-perishable like cloth, the producer shall be prepared to suffer a loss to the tune of his fixed cost only, for he must recover his variable manufacturing cost as also his cost of marketing. The producer, in the short period, cannot help the loss of his fixed cost because he has got to incur it if he has to have an establishment. But if the price of the commodity is low and the producer has to suffer losses, he will certainly stop further production and save the loss of his prime cost.

Thus we can say that in the short period there can be losses and gains. But the extent of the loss which a producer would be prepared to bear depends on the nature of the commodity. The point of equilibrium, mathematically speaking, shall be, where marginal cost is equal to price. The average cost will not be equal to marginal cost, it may be more or less than the marginal cost depending on the fact whether the producer is suffering a loss or making a profit. If the producer is making profit, the average cost shall be less than the marginal cost. But in the case of losses the average cost shall be higher than the marginal cost. This fact is shown in the diagrams given below AA' is the average cost curve and MM' is the marginal cost curve. Price or Average revenue, curve is SS' . Price curve cuts the marginal revenue curve at P' . So $P'R$ shall be the price.



[Fig. 1, showing gain]

In the above diagram PR is the price and $P'P$ per unit is the gain. Total gain is shown by the shaded area.



(Fig. 2, showing loss)

Here price is $P'R$ per unit and loss PP' per unit. Total loss is shown by the shaded area.

VALUE IN PERFECT COMPETITION LONG PERIOD

What is normal price ? Long period price or normal price is the price that rules in the market in the long period. It approximates, in normal times, the average of the short period prices spread over a number of smaller periods of time. For instance, if we take the monthly quotation of wheat prices at a particular place for all the twelve months of the year and then calculate the average, then that average price might be our normal or long period price. An illustration will make the point clear. Let us suppose that the price of wheat at Allahabad on the last day of every month of the year 1947 was as follows :—

| Months | Price per maund (in rupees) | | |
|-----------|-----------------------------|-----|----|
| January | ... | ... | 20 |
| February | ... | ... | 21 |
| March | ... | ... | 22 |
| April | ... | ... | 22 |
| May | ... | ... | 21 |
| June | ... | ... | 20 |
| July | ... | ... | 18 |
| August | ... | ... | 18 |
| September | ... | ... | 19 |
| October | ... | ... | 19 |
| November | ... | ... | 20 |
| December | ... | ... | 20 |

240

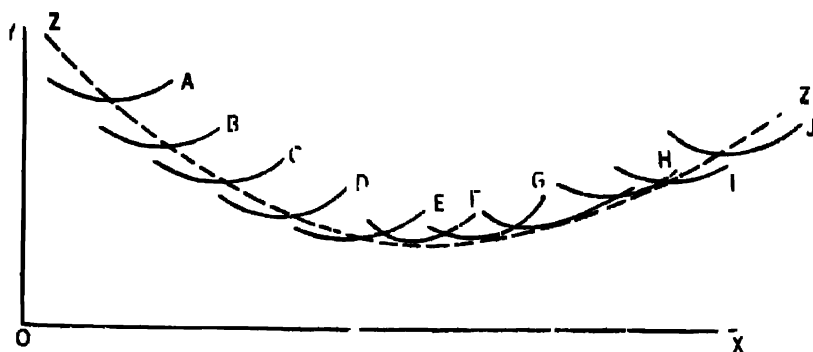
Normal price = $240/12 = 20$.

So normal price is equal to rupees twenty per maund.

How to draw long period cost curves ? The long period average cost curve is the locus of the lowest points of the short period average cost curves. That is, we find out the short

period average cost curves of a particular commodity spread over many periods of time. Then the lowest points of the short period curves are joined. The curve which we will now get shall be the long period average cost curve.* It has been shown in the diagram given below :

In this diagram A, B, C, D, E, F , and G , are short period average cost curves. Curve $\tilde{Z}\tilde{Z}'$ joins the lowest points of



all these short period average cost curves. $\tilde{Z}\tilde{Z}'$ is the long period average cost curve.

As regards the long period marginal cost curve there is no difficulty because it always passes through the lowest point on the average cost curve. So, in this case too it shall pass through the lowest point on the average cost curve.

STATIC EQUILIBRIUM

In the long period we will have different types of equilibria under different states. In the case of a stationary state we will have only static equilibrium. But in the case of long period dynamic state we may have dynamic equilibrium as also static equilibrium. Static equilibrium in a dynamic state may come into existence in a very long period and is a rare phenomenon. We will not discuss this in the present book and will confine ourselves to static equilibrium. The following are the main characteristics of the long period static equilibrium :--

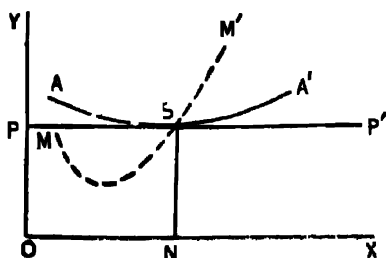
*Recently Mr. J. K. Mehta has shown his disagreement with this definition of the long period average cost curve. For his view refer to his book, 'Advanced Economic Theory', pp. 126-131.

1. Under this every firm will be producing at the least cost and will be an optimum firm.
2. The cost of production of each and every firm will be the same.
3. No firm will have any profit or will suffer any loss. The average cost of production of every firm will be equal to its average revenue.

All these points have been discussed in greater details in the pages below.

Long Period Static State and Cost of Production. Under long period, perfect competition and static equilibrium, it is necessary that the price of the commodity must be equal to the average cost of production as well as the marginal cost of production of the commodity. This means that the producer can earn neither profits nor suffer losses. If he earns extra profits, other producers shall be attracted in that business and that will result in increased production. As the production of the commodity increases, the price—in accordance with the law of Demand and Supply—will go down and it will continue to decline till it is equal to the marginal as well as the average cost of production. Similarly, if the producer is suffering losses he will go out of production and shift to some other business. This will result in a reduction of the supply of the commodity. As the supply decreases, the price will increase and will continue to do so till it is equal to the average as well as the marginal cost of production. So the price of a commodity in the long run must be equal to its average as well as the marginal cost of production. The same thing has been shown in the diagram below :

In this diagram MM' is the marginal cost curve and AA' , the average cost curve. PP' is the price curve or average revenue curve. They meet at the point S . ON will be the unit demanded and SN the price.



Size of a Firm. In the long period under perfect competition, a firm shall be of the optimum size, having the lowest cost of production. It is in the interest of a firm to go on expanding its production so long as the marginal cost of production is below average cost of production. But as production expands the disparity between the marginal cost and average cost becomes narrower and narrower till it disappears altogether. It is at this point that the size of the firm is best and its cost of production least. That is because the point of intersection between marginal cost curve and average cost curve is that where average cost of production is least. In other words the marginal cost curve passes through the lowest point on the average cost curve. It means that where marginal cost curve and average cost curve meet the cost of production is least. After this point average cost curve will be lower than the marginal cost curve. This implies that it will not be to the advantage of the producer to expand production beyond this point. So the conclusion is that under perfect competition in the long period in static equilibrium, every firm shall be the best-sized and least-cost firm. The position is as shown in the previous diagram.

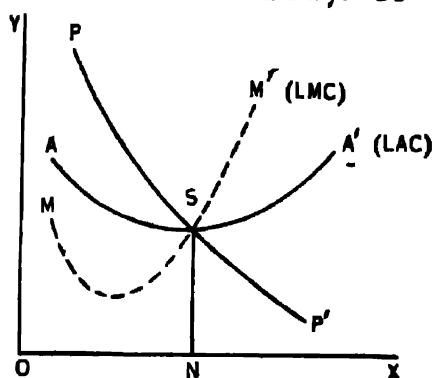
The same idea is also expressed mathematically by saying that long-period price line is tangential to the average cost curve.

Long Period Static Equilibrium and Industry. In the long run under perfect competition and in a static economy, the industry shall also be in equilibrium*. *The point of equilibrium here also shall be that where marginal and average costs of the industry are equal to its average revenue or price.* This has been shown in the diagram given on the next page.

We have seen above that the point of equilibrium in case of an industry is the same as in the case of a firm, namely, that given by the equality of the average revenue and marginal cost.

*It may, however, be pointed out for the sake of clarity that when a firm is in equilibrium, it is not necessary that the industry must also be in equilibrium.

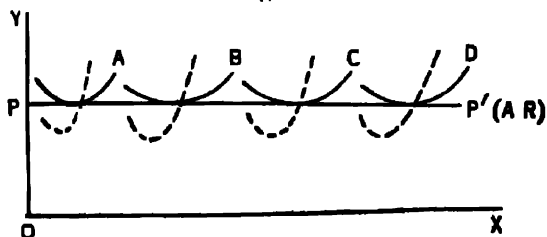
In this diagram MM' is the marginal cost of an industry and AA' the average cost curve of the same industry. PP' is the average revenue curve or the price curve of the industry. Its downward sloping shape should be carefully noted. S is the point of equilibrium. SN is the price and ON , the units demanded.



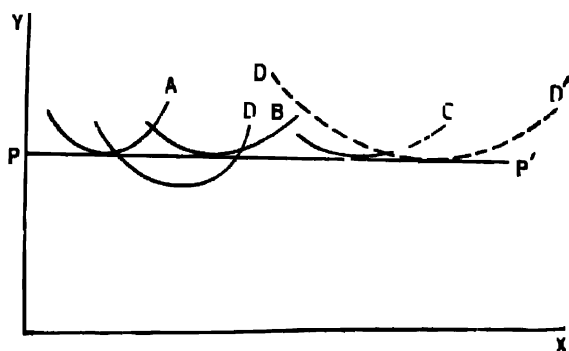
But this should not give an impression that there is no difference between the two cases. As a matter of fact there is a lot of difference between the curves in these two cases. While the long period average revenue curve of a firm is horizontal, that of an industry is downward sloping. Further, while the long period average cost curve of a firm is a composite of its short period average cost curves, the long period average cost curve of an industry is composite of long period average cost curves of all firms. So it is flatter. Again, while the long period marginal cost curve of a firm is composed of short period marginal cost curves, the long period marginal cost curve of an industry is composite of long period marginal cost curves of all the firms taken together.

Average Cost Further Analysed. It has been shown that the point of equilibrium of an industry in the long period static state is one where the price line is tangential to the average cost curve of the industry. But how are we to find out the average cost curve of the industry as a whole? The average cost curve of the industry is obtained by adding up the output of all the firms for each level of average cost.

In this diagram PP' is the average revenue curve. A, B, C, D are average cost curves of different firms. Their respective marginal cost curves are shown by dotted lines.



Under conditions of long period static equilibrium it is necessary that all the firms must be of the optimum size and their cost equal. Supposing that due to some reason the cost of production of a firm is less than that of others. Then either this firm will oust all other firms and become a monopolist, or it will go on expanding production with the result that its cost of production shall also come to be the same as that of the other firms. Whatever might happen, it is necessary that at the point of equilibrium all the firms must be of the optimum size and should have the same cost of production. The cost curves shall be in the form of a "family of hyperbola"* as Sraffa pointed out. It has been shown below:—



In this diagram *A, B, C* are three optimum firms and *PP'* is the average revenue curve. Supposing *D* is a new firm whose cost of production is the least. Now two alternatives are possible. Either the firm *D* will become partially monopolistic and make some profit or the firm *D* will expand production, till its cost curve assumes the shape of *DD'* and its average cost becomes equal to that of other firms.

DYNAMIC EQUILIBRIUM

In a dynamic state as the equilibrium is also dynamic the determination of price is quite a difficult task. In that state firms are of different sizes and under different stages of economic development. Some are expanding, while others

* A hyperbolic curve is a U shaped curve and represents average cost of production curve of a firm.

are contracting. Some would be earning profits while others suffering losses. In such a condition, the price cannot be equal to the cost of production of the marginal firm because that would mean that every firm was earning a profit. It cannot also be equal to the cost of production of the most efficient firm because in that case all the other firms would have to suffer a loss. Nor can it be equal to the cost of production of the average firm because the average firm is not known. Whose cost of production will then determine the price?

Representative Firm. Marshall gave an answer to this question. He said that the price will be equal to the cost of production of the 'Representative Firm'. He defined 'representative firm' as that firm which "has a fairly long life and fair success, which is managed with normal ability and which has normal access to economies, external and internal, which belong to that aggregate volume of production".* Such a firm will neither expand nor contract while other firms may increase or decrease their outputs.

Marshall, at the time of giving the concept of the representative firm, drew the analogy of trees growing in a virgin forest. At a time some trees may be just sprouting, others have grown to a certain height and are mature while still others are old and decaying. Similarly firms are of various sizes. Some are young and are developing, others have reached a certain size and are making fuller use of economies of large scale production, others are mature and have normal access to economies and efficiency, while still others are old and have outgrown their efficiency. Broadly they may be divided into three groups:—

(1) *Young firms* are those firms which are growing in efficiency, have access to more and more economies and are increasing in size.

(2) *Mature firms* are those firms which are neither young nor old, which have gathered experience, have built up some goodwill and have access to normal economies.

(3) *Old firms* are those firms which have outgrown their efficiency and are decaying.

In the case of each of these groups there are firms which are of extraordinary efficiency, some of poor efficiency and still others of normal efficiency. Of these Marshall had in mind the normal firm which is an average firm in every respect.

The following are the main characteristics of his 'representative firm':—

1. It is an average firm that particular sort of average firm at which we need to look in order to see how far the economies, internal and external, of production on a large scale have extended generally in the industry and in the country.

2. It neither expands nor contracts.

3. It neither earns profits nor suffers losses.

4. It is neither young nor old.

5. There may be many such average firms.

Equilibrium Firm. A. C. Pigou, who is a disciple of Marshall, invented a new concept of the 'equilibrium firm', as a slight modification to Marshall's 'representative firm' with a view to solving the problem. According to him while an industry is in equilibrium, it may be that no firm is in equilibrium—the individual firms may be either contracting or expanding. But when an industry is in equilibrium, we can imagine a firm which is also in equilibrium, that is, a firm which is neither expanding nor contracting. The condition may be as follows:—

| Firms | Output in 1st year | Output in 2nd year |
|-------------|-----------------------|-----------------------|
| A | 100 | 50 |
| B | 150 | 100 |
| C | 200 | 250 |
| D | 300 | 300 |
| E | 400 | 450 |
| <hr/> Total | <hr/> 1,150 | <hr/> 1,150 |

Marshall's and Pigou's Views. If we combine the views of Marshall on representative firm and of Pigou on equilibrium firm, we come to the following conclusions :—

1. Such a firm neither expands nor contracts.
2. Such a firm neither earns a profit nor suffers a loss.
3. Such a firm may exist or may not. We can however imagine such a firm existing.
4. There may be one such firm or many.

CRITICISM OF THE REPRESENTATIVE FIRM

The concept of the representative firm, as given by Marshall, has been subjected to much criticism by various writers. The following are the main points of criticism:—

1. The concept is purely imaginary. Such a firm nowhere exists. Marshall has made a wide guess.
2. Even if the concept is real, the whole argument suffers from circular reasoning. In short it comes to this:—

Normal price is equal to the cost of the representative firm, which is a firm whose cost is equal to normal price. Marshall has assumed what he wanted to prove.

3. The meaning of the word 'representative' is not clear. Is it representative plant or technical production unit or a representative business organization? Further, is it representative of cost or size? Marshall does not make these points clear.

4. If we think of the long period and perfect competition where production is being carried on under increasing returns, then there cannot be many firms. The condition of monopoly shall begin to operate and the most efficient firm shall oust all others from the market.

5. In the long period there can be no firm which does not earn any profit.

Criticism Examined. None of the criticisms which are given above is correct. They are due to a misunderstanding of Marshall's point of view. The concept of the representative firm, however, suffers from some other defects, which will be discussed later on. Here the above criticisms are examined and their mistakes pointed out.

1. It is wrong to say that this is an imaginary concept. Sir Sydney Chapman and Ashton carried on researches in the size of the firms in 1914 and came to the conclusion that such a firm does exist in actual life. Hence such a criticism is invalid.

2. The criticism of circular reasoning would have been true had we arrived at the concept in the manner given in the criticism. The reasoning which is followed in arriving at this concept is quite different. It is as under:—

(A) Price in dynamic equilibrium is equal to average cost.

(B) Average cost of which firm ?

Average cost of the whole industry.

(C) How are we to know the average cost of the whole industry ?

By looking at the average cost of the representative firm.

(D) What determines the average cost of the representative firm ?

It depends on the volume of production of the representative firm.

(E) What determines the volume of productions of the representative firm ?

It depends on the optimism and pessimism of the firms within the industry and those outside the industry.

(F) On what do optimism and pessimism of the producers depend ?

On whether the average cost of the representative firm is above or below price; or whether the representative firm is making a profit or suffering a loss. So the criticism of circular reasoning is incorrect.

3. The remark that the meaning of the word representative is not clear is really very pertinent. In answer we can say that it is *representative of cost*.

4. It is wrong to think that under perfect competition and at the point of equilibrium, a firm can get either increasing returns or diminishing returns. It can get only constant returns. A firm in isolation cannot get increasing returns. If they operate, they will operate for the industry as a whole. And if the industry is getting increasing returns all other firms in that industry shall also begin to get it.

5. To say that in the long period there can be no firm which does not earn a profit is to use the term 'profit' in a different sense. Profit means 'abnormal profit' or 'extra profit'. It is over and above normal profit and normal profit is included in the cost of production. So this criticism is also invalid.

Therefore, we can say that the concept of the representative firm does not suffer from any of the defects pointed out above.

Real Defects. It does not mean, however, that the concept of the representative firm, as given by Marshall, is free from all defects. Two points are worth considering here.

1. Marshall does not say explicitly whether his concept is applicable in dynamic state or in static state or in both. This is likely to create confusion.

2. It is wrong to think that the representative firm is *always* in equilibrium. It must represent the industry and, therefore, expand with its expansion and contract with its contraction. Pigou did put his finger on this weak point when he said that Marshall's representative firm is in fact not *representative* firm, but an *equilibrium* firm. But Pigou could not clarify the point further.

NEW DEFINITION OF THE REPRESENTATIVE FIRM

The above discussion clearly shows that Marshall's representative firm is not a very useful and clearcut concept. There is, therefore, need for a new definition of this concept of the representative firm.

Mr. J. K. Mehta has given a new meaning to the concept of the representative firm and if we adopt his point of view then the above two defects are also removed.

According to Mr. Mehta a representative firm is that firm which represents the industry fully. That is, it expands when the industry is expanding and contracts when the industry is contracting. Like Marshall's representative firm it does not remain in equilibrium all the time. *It represents the tendency of the whole industry all the time.*

The second point which is important to remember is that the representative firm helps in the determination of price *only in long period dynamic state*. In long period static state, it has no importance.

Mr. Mehta's View Further Explained. In dynamic state and under perfect competition, an industry may be expanding or contracting because of various reasons. When it is expanding or contracting, the firms composing the industry may also be expanding or contracting and may also be going out or coming in. When the industry is expanding, the flow of resources within the industry will increase. But when the industry is contracting there will be no fresh flow of resources in it. Now when the industry is expanding, the representative firm will also be expanding and when the industry is contracting, the representative firm will also be contracting. On this basis it can be said that if the representative firm is expanding, there will be fresh flow of resources within the industry and if it is contracting, there will be a net outflow of resources. And when the representative firm is neither expanding nor contracting, the industry as a whole will be in equilibrium in the sense that the flow in and out of the resources is at standstill. This being the case, we are justified in saying that the representative firm is

the centre of attraction of all the firms within the industry and also of new entrants ; and the average cost of the representative firm determines the price.

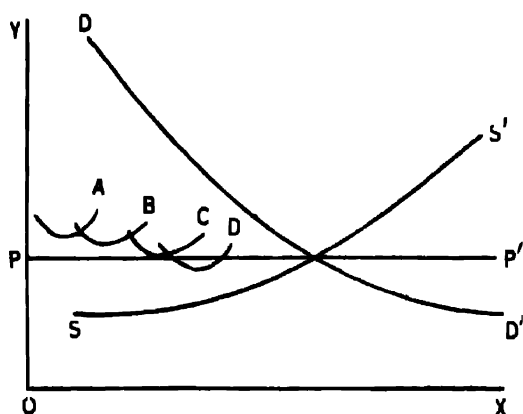
When the representative firm is expanding, new firms will tend to come in and the industry will expand. It will result in lowering of the price. The tendency on the part of firms to expand will grow weaker. A position of stability will be reached when the representative firm will show no tendency to grow. That will happen when the price is equal to the average cost of the representative firm. The reverse argument will apply when the representative firm is contracting. It will contract only when the price is lower than its average cost. Some firms will go out of production. Price will rise till it is equal to the average cost of the representative firm. At this point the representative firm will reach equilibrium and so also will the industry. Thus we see that the price will always go up and down but it will always endeavour to equal the average cost of the representative firm.

It is, however, pertinent to remark that the representative firm and the average cost of the representative firm, too, may not always remain fixed. They may change. But the tendency of the price to equal the average cost of the representative firm will always be present. So we can conclude that the average cost of the representative firm determines the price.

The whole argument may be worded in mathematical language. Price is determined by the interaction of demand and supply. Demand being taken as fixed, supply will depend on cost. It is, however, not the cost of an individual firm but of the industry as a whole. Average cost of various firms may be above or below the average cost of the industry. But there may be one firm whose average cost may be equal to the average cost of the industry. That is the representative firm. And since its cost is equal to the industry, we are justified in saying that its cost determines the price.

The diagram given on the next page illustrates the point very well. In the diagram DD' demand curve of the industry and SS' the Supply curve. PP' is the price of the industry. $ABCD$ are various firms. Firm C has the same

average cost as the industry and is, therefore, the representative firm.



But representative firm may not always exist. That being so, we cannot find any identity between the cost of an industry and that of a firm. "Yet if we must predicate our statement of a firm we can still speak of the representative firm, and understand by it not any particular firm but only use it as a small scale picture of an industry".*

There are some critics who maintain that the price under long period and dynamic equilibrium is equal to the average cost of the representative firm but it is not determined by it. That is, there is no causal relationship between the price under long period dynamic equilibrium and the average cost of the representative firm.

But this argument is not correct. It may appear to some that the cost of one firm cannot determine the price of a commodity. The cost of production of all the firms or total demand and supply of all the firms should determine the price. But this fact is not sufficient to dispute the concept of the representative firm.

In a dynamic state some firms make profits and some others make losses. Yet neither new firms may come in nor

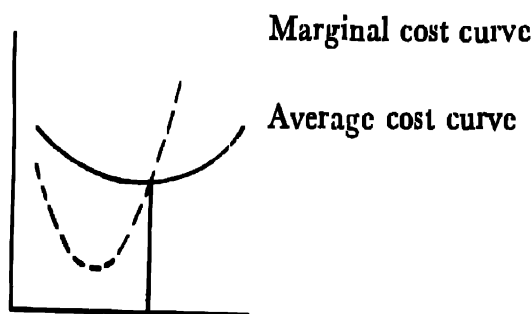
*See J K Mehta, *Advanced Economic Theory*, P. 142

old firms go out. Ordinarily when there is profit, new firms should come on. Similarly at the time of losses, resources should flow out of the industry. *But this does not happen because the expectation of profits is neutralised by that of losses.* This means that the industry as a whole is neither making a profit nor suffering a loss. In such a situation there is a firm whose cost of production is equal to the cost of production of the industry as a whole. This firm will neither be making profits nor suffering losses. As this firm represents the conditions of the industry we can call it a representative firm and since its cost is equal to the cost of the industry, we can say that the cost of production of this firm determines the price.

LAWS OF RETURNS AND VALUE

In some books the effect of the laws of returns on price is discussed. There an attempt is made to find out the effect on the price of a commodity when it is produced either under the law of Increasing Returns or of Diminishing Returns. This gives an impression that under perfect competition and at the point of equilibrium production can be carried on under increasing or diminishing returns. But that is not correct. Under perfect competition and at the point of equilibrium, production can be carried on only under constant returns and at that point no other law can operate. Therefore, the whole discussion of the laws of returns and their effect on price-determination is redundant.

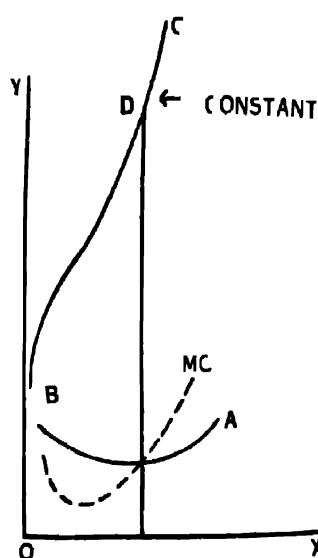
The cost curve of a firm is *U* shaped. That shows that in the beginning, a producer gets increasing returns or diminishing cost which later on changes into constant returns or constant cost and finally he begins to get diminishing returns or increasing cost. This is universally correct and that is why the average cost curve of a firm is always *U* shaped as shown in the diagram below.



(Relationship between average and marginal cost curves.)

We also know that under perfect competition every firm shall be of the optimum size. In order that the firm may be of optimum size with its unit cost of production least, the producer should go on producing so long as the marginal cost of production is lower than the average cost

of production. He will stop production at that point where both the costs are equal, because if he carries on production further, the marginal cost will be higher than the average cost and the producer shall have to suffer a loss. And where average cost and marginal costs are equal, the producer will get constant returns. This is shown in the following diagram:-



In the above diagram *MC* curve shows marginal cost and *A* curve average cost. curve *BC* shows returns that a producer is getting. In the *BC* curve, the producer gets increasing returns upto point *D*, after which he begins to get diminishing returns. At the point *D* he gets constant returns. The diagram shows that when a producer begins to get constant returns at that point his average and marginal costs are equal. This is the ideal position for him as a producer.

At the point at which average and marginal cost curves meet, constant returns begin to operate. Where average cost is above the marginal cost, increasing returns operate and where marginal cost curve is above the average cost curve, diminishing returns operate. And since a producer shall stop production at the place where marginal and average costs are equal, it means that at that point constant returns will be operating. This shows that at the point of equilibrium under perfect competition, only constant returns will operate. Therefore, the discussion of the effect of Diminishing and Increasing Returns on the determination of price is useless.

CHAPTER XXXVI

MONOPOLY VALUE

The word 'monopoly' is a compound of two words, 'mono' meaning single and 'poly' meaning producer. So monopoly literally means 'single producer'. In perfect competition there are innumerable producers. But in monopoly there is only one producer. So monopoly is just the reverse of perfect competition.

There is yet a better way of defining monopoly. It signifies complete absence of competition. While in case of perfect competition a producer has no control over price, under monopoly the producer exercises control over the price of his commodity.

Since monopoly means complete control over price, it naturally follows that the demand curve of a monopolist must be a vertical straight line*. From this it follows that like perfect competition, monopoly also does not exist in the real life. It is a purely imaginary concept.

But because monopoly is an unrealistic concept, it is not necessary that we should discard it altogether. If we can study perfect competition, which is also imaginary, there is no justification for our not studying monopoly. As a matter of fact monopoly and perfect competition are two extreme cases, both of which are unrealistic. In between them lies imperfect competition which is the only realistic study

Here arises one more question. When we are discussing the question of the determination of price under monopoly, should we draw a vertical straight line representing the demand

*See J. K. Mehta, *Advanced Economic Theory*, P. 77.

It will not be out of place here to mention that according to Marshall, a monopolist should have control of 'substantial' amount of a commodity. But the meaning of the word 'substantial' is very vague and the confusion becomes worse when an attempt is made to distinguish imperfect competition from monopoly.

curve (that is perfectly inelastic demand curve) or should we have a downward sloping demand curve so as to represent imperfectly elastic demand curve ? Logically we must draw a vertical straight line to represent the demand curve. But a completely inelastic demand curve never exists. Most of the economists therefore draw a downward sloping demand curve. But a downward sloping curve is also drawn to represent imperfect competition. What difference do they then make between monopoly and imperfect competition ?

In fact Mrs. Joan Robinson makes no difference because for her every producer in an imperfect market is a monopolist (in our sense a partial-monopolist) and Professor Chamberlain says very much the same thing when he explains imperfection as a case of competition between monopolists. It is however maintained that the greater the degree of monopoly element the more vertical and, in general, the further away from the axes is the demand curve.

Monopoly and Competition Contrasted. There is a great difference between monopoly and perfect competition. The following are the main points of difference.

1. The demand curve of a firm under perfect competition is horizontal, meaning thereby that he can sell any amount of his commodity at the given price and none at all at a slightly higher price. For then all his customers would shift to other producers. Similarly, if he reduces the price even by a small fraction, he will get all the customers of other producers and other producers will go out of the pictures leaving him a monopolist and not a perfect competitor. But the demand curve of a monopolist is downwardly sloping.

2. Under perfect competition, a producer cannot discriminate between his various customers. He has to charge the same price from all his customers for the fear of losing them. A monopolist, on the other hand, can discriminate between different customers. There is no danger of any other producer taking away his customers.

3. A producer under perfect competition can sell any amount of his commodity at the ruling price. But a mono-

polist cannot do so. If he wants to sell more, he has to reduce the price of his commodity. So when a monopolist sells more at a reduced price, the loss to him is not only on the additional units sold, but on the total units sold by him.

4. Under perfect competition each factor of production is paid according to the full value of his marginal productivity. But in case of a monopoly, each factor gets an amount equal to his marginal revenue product, which is less than the value of marginal product*.

FIXATION OF MONOPOLY PRICE

Net Monopoly Revenue. The aim of a monopolist is to maximise the net monopoly revenue. Net monopoly revenue is the excess of income over cost inclusive of what is called the normal earning of the management. Under perfect competition and long period, a producer covers his prime and supplementary costs as well as normal profits. All these combined make up the cost of production. Everything over and above this cost, which is obtained due to monopoly rights, is called the 'net monopoly revenue'. It is of the nature of surplus earning. The aim of the monopolist is to maximise this surplus or to get as much of monopoly revenue as he possibly can.

* *How Does a Monopolist Fix Price?* Marshall was, probably, the first English economist to give the theory of monopoly value in a comprehensive form. He pointed out the method of 'trial and error'. He said that with a view to maximising his monopoly revenue, the monopolist shall look to two things, (1) the elasticity of demand for his commodity and (2) his cost of production, that is whether he is producing under the law of increasing returns, diminishing returns or constant returns.

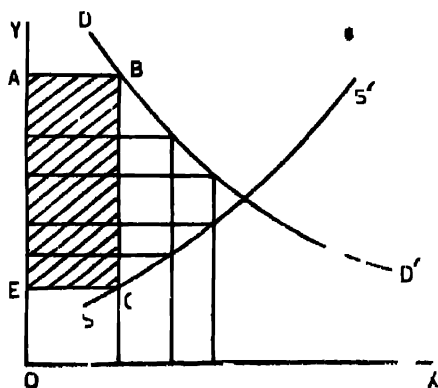
Price and Elasticity of Demand. If the monopolist finds that the demand for his commodity is highly elastic so much so that a slight increase in price shall bring about a substantial fall in the demand for his commodity, it will be

*Refer chapter on wages.

to his interest not to raise the price of the commodity very high. On the other hand, if the demand for his commodity is highly inelastic, he shall be in a position to charge a fairly high price without adversely affecting his monopoly revenue.

Price and Cost of Production. The monopolist has also to see whether he is producing his commodity under the law of diminishing returns or under the law of increasing returns. If he is getting increasing returns, it will be to his interest to put a larger amount of his commodity in the market as his cost of production shall go on decreasing as he produces more. On the other hand, if he is producing under the law of diminishing returns, his cost of production shall go on increasing as he produces more and therefore, he will be in an advantageous position if he puts a smaller amount of his commodity in the market. If, however, he is producing under constant returns, his cost of production will remain the same and he will concentrate his attention only on the elasticity of demand of his commodity.

The Fixation of Price. Armed with this knowledge, the monopolist will make a number of experiments. He will increase the amount of his commodity and find out his monopoly gain. He will then reduce the amount and find out his monopoly gain. Again he will increase his supply a bit and assess his monopoly gain and so on. Thus after a number of experiments and by a process of 'trial and error', he will hit upon a point where his monopoly gain is maximum and that point determines the price he will charge.

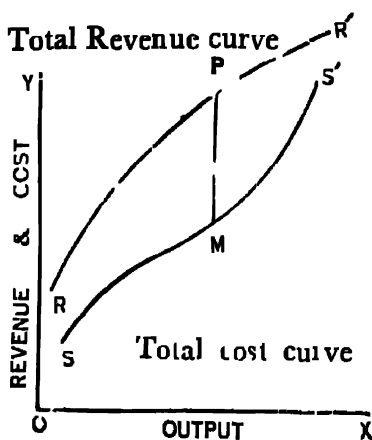


Here the area *ABCE*, representing net monopoly revenue is the maximum possible. So he will charge *OA* price and sell *AB* units.

His experience shall tell him that neither a very high price, nor a very low price would bring him maximum monopoly revenue. He shall have to study, very carefully, the conditions of cost of production and elasticity of demand and then discover the precise point where his monopoly revenue is maximum. This is shown in the diagram on the previous page.

Cost of Production and Monopoly. It will not be out of place here to mention that while under perfect competition, price in the long run tends to be equal to the cost of production (it can never be more or less than the cost of production), under monopoly cost of production only forms the lowest limit below which price can never fall. But it does not form the highest limit as in the case of perfect competition. That is why a monopolist is in a position to earn monopoly revenue.

We can illustrate this point with the help of a diagram, which is better than that given by Marshall.



In this diagram RR' is the total revenue curve, which rises in the beginning, then remains constant and afterwards falls, representing thereby, increasing, constant and diminishing returns respectively. SS' is the total cost curve or the supply curve. The monopolist will produce that amount where the difference between total revenue and total cost is maximum. In the diagram PM shows the greatest difference between these two

and it is at this point that his monopoly gain shall be highest.

Shortcoming of the Marshallian Approach. The greatest shortcoming of the Marshallian approach is that we are not able to tell the precise point at which the net monopoly revenue is maximum. Everything is left vague by the process of 'trial and error'

DISCRIMINATING MONOPOLY

As we have already pointed out a monopolist, because of his special privilege to control price, can charge different prices from his different customers. The phenomenon of charging different prices from different customers is known as price discrimination. If under monopoly price discrimination is practised, the monopoly is known as discriminating monopoly.

Conditions Necessary for Price-discrimination. Two conditions are necessary for successful price-discrimination. They are:

(1) *The elasticity of demand of different sectors of population must be different.* This is so because the price that a consumer pays for a commodity depends on the elasticity of demand for that commodity. If in the two markets the elasticity of demand is the same, then the price also will have to be the same and there cannot be any discrimination. Only when the elasticity of demand of the consumers for that commodity in the various markets is different that discrimination is possible.

(2) *The two markets must be kept separate.* This is necessary so that the consumers who are charged higher price may not be in a position to shift their demand to another market where prices are lower. If this is possible, price discrimination cannot be practised.

Conditions Favouring Price-discrimination. Besides the monopolistic position of the producer, the following are the other conditions which facilitate price discrimination. They are:

(1) *Nature of the commodity.* Nature of the commodity or service may be such that it cannot be transferred to any other consumer. For instance, the direct service rendered to a patient by a doctor. It is not possible that another patient may come in place of the other with a view to saving the doctors' fee.

(2) *Government regulation.* The government may prevent movement of goods from one place to another as happens

in times of war. The government may also prevent others to enter in a particular business as happens in case of public utility concerns like electricity, the post office etc.

(3) *Cost of transportation.* The monopolist may so divide various markets geographically as to make the cost of transporting commodity from one market to another considerable.

(4) *Same service for differentiated commodities.* When the consumers want the same service in connection with clearly differentiated commodities, price discrimination is very easy. For instance, the railway company is very easily able to discriminate and charge different prices for hauling different commodities from one place to another. Even when the distance is the same, charges are different depending on the kind of the commodity.

(5) Some sort of haphazard discrimination, according to Mrs. Joan Robinson, is also possible when commodities are supplied according to specific orders so that the consumer is not able to know what price is being charged from other customers.

Types of Discrimination. Many writers have attempted a classification of price discrimination. But the most standard classification is that given by Prof. A. C. Pigou*. He divides price discrimination into three classes, namely, (1) price discrimination of the first degree, (2) price discrimination of the second degree, and (3) price discrimination of the third degree. They are explained below:

(1) *Price discrimination of the first degree.* It is the most powerful. Under it different price is charged for each unit of a commodity. It is possible for instance in case of doctors and lawyers. They can charge a different price for each unit.

(2) *Price discrimination of the second degree.* Under it markets are divided under different groups. Each member of that

*See A. C. Pigou 'Economics of Welfare'.

group is charged the lowest price which any member of that group is willing to pay. The best example is the division of railway compartment in different classes first, second, and third.

(3) *Price discrimination of the third degree.* This is the most common type. Under it markets are divided indiscriminately and each market is charged a price on the basis of elasticity of demand.

But this classification of Prof. Pigou, as has been pointed out by Mrs. Joan Robinson, suffers from one great defect. He has simply cared to divide the commodity between different markets, but has paid no attention to the division of individual buyers. He does not make clear as to how this division can be done. But in the absence of any other better classification, we shall stick to Prof. Pigou's classification.

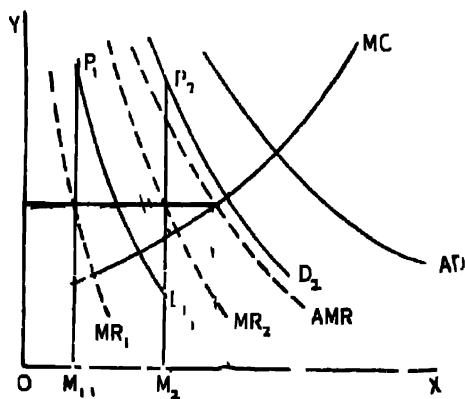
Price discrimination may also be classified as (1) personal, (2) geographical and (3) trade. When different prices are charged from different individuals, as in the case of doctors or lawyers, it is a case of personal discrimination. When different prices are charged in different countries, it is known as geographical price discrimination. When discrimination is practised as between various trades, as is done by railway companies in charging different transport charges, it is a case of trade price-discrimination.

THEORY OF PRICE-DISCRIMINATION

A monopolist practises price discrimination because he knows that by charging different prices and selling different amounts in different markets, he will be able to increase his monopoly gain. Unless he can increase his gain, it is futile on his part to practise price discrimination.

With a view to maximising his gain, he will divide his field into various markets according to the elasticity of demand for the commodity. He will sell less in those markets where the elasticity of demand is lower and marginal revenue is smaller, and more in those where the elasticity of demand is higher and marginal revenue greater. He will adjust his

sales in such a manner as to make the marginal revenue obtained by selling an additional unit the same in all the markets. "And his profits will be at a maximum when the marginal revenue is equal to the marginal cost of the whole output"¹. Mathematically speaking this position will be obtained *when marginal cost curve cuts the aggregate marginal revenue curve*. This can be shown below by means of a diagram.²



In this diagram

- D_1 is the demand curve of one market
- MR_1 is the marginal revenue curve of the first market
- D_2 is the demand curve of the second market
- MR_2 is the marginal revenue curve of the second market.
- AMR is the aggregate marginal revenue curve of both the markets
- AD is the aggregate demand curve of both the markets
- MC is the marginal cost curve.
- P_2M_2 will be the price in the second market
- P_1M_1 will be the price in the first market
- OM_1 will be the unit sold in the first market
- M_1M_2 will be the unit sold in the second market

¹See Mrs. Joan Robinson 'Economics of Imperfect Competition', p. 181

²*Ibid*, p. 181

CHAPTER XXXVII

VALUE IN IMPERFECT COMPETITION

We have already pointed out in earlier chapters that in real life neither the conditions of perfect competition nor those of perfect monopoly exist. The conditions that we experience in daily life are those of imperfect competition, a condition mid-way between perfect competition and perfect monopoly. That is every producer has some set customers who always go to him and yet there are some other customers who buy from the cheapest market and are not fixed to any dealer. Different producers charge different prices for the same commodity in one market, meaning thereby that there is not one single price ruling in the market. While at some time different producers charge the same price for a commodity, at the other time one producer charges different prices for the same commodity from different set of customers. While some producers suffer a loss or get some profit, some others sell at their cost of production making no profits. In short, under imperfect competition, mixed conditions of monopoly as well as perfect competition are found.

Determination of Price. Under imperfect competition producer will not sell their commodities at their cost of production. They will try to get some surplus, as in case of monopoly, and this surplus has been called 'net monopoly revenue' by Mrs. Joan Robinson. This surplus gain will arise under imperfect competition because under this condition there are few producers of a commodity each one controlling a substantial portion of the supply and thus affecting the market price. Under perfect competition every producer produces a very small portion of the total supply and, therefore, has no influence over the market price. Under monopoly a producer is the sole producer and, therefore, can fully affect the market price of the commodity. Under imperfect competition the situation is mid-way, there being a small number of producers, each one having some influence on the market price of the commodity because each one produces a substantial part of the total produce.

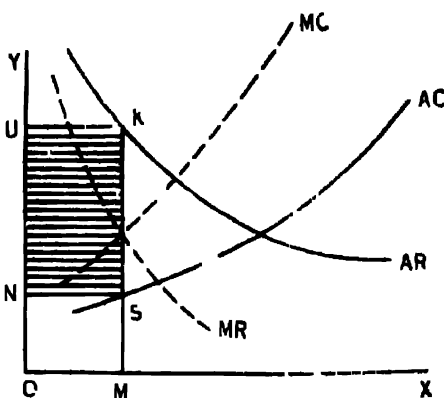
Yet another reason is that market is not perfect because consumers are ignorant and do not have perfect knowledge of the price at which different producers are selling the commodity. Because of this ignorance they continue to patronise one producer and pay him the price he demands, thus allowing him to make some surplus gain.

Under imperfect competition the producer will try to maximise his surplus gain, called, net monopoly revenue. With this aim in view he will go on producing and selling his commodity so long as the addition made to the total cost by producing one more unit of his commodity is less than the addition made to the total revenue by selling one more unit of his commodity. Under perfect competition a producer can sell any quantity of his commodity at the ruling market price. But under imperfect competition, if a producer wants to sell more he will have to reduce the price of his commodity. And when he reduces the price of his commodity he will have to charge that price not only for the last or marginal unit he wants to sell but for all the units of his commodity he is selling. So every time the producer sells one more unit of his commodity, he will have to find out the loss due to a reduction in prices on all the units he is selling and the extra income he is getting by selling the last unit. If the net result shows that he is not a loser then only he will take the trouble of producing and selling one more unit, otherwise not.

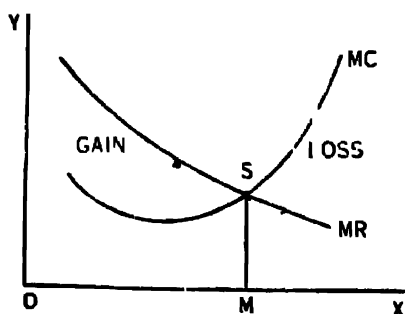
Modern economists have coined two new words in order to point out exactly where the net monopoly revenue shall be maximum. The addition made to the total revenue by selling one more unit of a commodity, they call marginal revenue. The addition to the total cost incurred by producing one more unit of a commodity, they call marginal cost. The aim of the producer will be to *equate marginal revenue with marginal cost* for then only will his net monopoly revenue be maximum. This, therefore, is the point of equilibrium. It can be represented graphically as shown on the next page.

In the diagram *AR* is the average revenue curve and *MR* the marginal revenue curve. *MC* is the marginal cost

curve and AC the average cost curve, KM represents the price which the producer will charge and OM the amount that he will produce. $UKSN$ is the area which represents his net monopoly revenue. This has been obtained by multiplying gain per unit with the total units sold. KM is the price and SM , his cost per unit. The monopoly gain per unit, therefore, is KS . OM is the total units sold. So the net monopoly gain is $SN \times KS = SN \times UK$.



The view further explained. But what is the proof that when marginal revenue is equal to marginal cost, net monopoly revenue is highest? The proof is quite simple and becomes clear if we draw marginal revenue and marginal cost curves as has been done below:-



These curves cut each other at the point S . Up to the point S , marginal cost curve is below marginal revenue curve, meaning thereby that it will be in the interest of the producer to continue production till he reaches the point S . But after the point S is reached, conditions become reverse.

After that marginal cost becomes higher than the marginal revenue. This shows that his cost on the marginal unit shall be more than his revenue on the marginal unit. So he will be a loser. This shows that so long as the point S is not reached, the producer is a gainer. But after that he begins to lose. Naturally, therefore, he will stop production at the point S (the point of intersection of marginal revenue and marginal cost) because here his total gain shall be maximum.

CHAPTER XXXVIII

INTER-RELATED VALUES

So far we have assumed, in order to simplify matters, that business units produce only one product or service. But in fact most of the businessmen produce more than one product, and in some cases a good many. These goods are seldom produced independently, the production of two or more of them being taken up together. The value of such joint products is determined in the same manner as the value of independent products so far discussed. But they involve some new problems and, therefore, the determination of their value will be discussed separately.

VALUE OF JOINT PRODUCTS

Meaning of Joint Products. According to Marshall, joint products mean things which cannot easily be produced separately; but are joined in a common origin.....such as beef and hide or wheat and straw.* The inherent characteristic of joint products is that they are *jointly* produced and in a *fixed* proportion, so that the production of a given amount of one product will necessarily lead to the production of a certain fixed amount of the other product.

There are some economists who classify joint products into two categories, namely, (1) those whose relative proportion can be changed and (2) those whose relative proportion cannot be changed. But this is not correct for the extent to which their relative proportion can be changed, they are not joint products but separate. This is the natural conclusion of our definition of joint product. But we will have to admit that it is not possible to find a perfect illustration of a joint product because the relative proportion of most of the joint products can be changed, thanks to the development of scientific knowledge. For instance, the relative proportion of beef and milk from cattle can be varied by breeding better type of beef cattle. This has been made possible in Texas.

*Alfred Marshall 'Principles of Economics', p. 388

Similarly, the amount of straw in proportion to wheat can also be changed by systematic plant breeding. Likewise, if the importance of cotton seed increases cotton plants with larger and more seeds will soon be developed. "Cotton seed oil became so important during the Second World War that there was some discussion of this possibility."* It is, therefore, wrong to think that it is impossible to change the proportion of cotton seed in a cotton plant.

Price of Joint Products Now that the meaning of joint products is clear it will be possible for us to see how their prices are determined.

Joint Products and Market Prices. The market price or short period price of joint product is easy to determine. The short period price shall be determined by the general condition of supply and demand of the joint product existing in the market. In the short period commodities have already been produced and the cost of production shall play a secondary role. Various units of the commodity shall be offered for sale at different prices and the demand for the respective commodities shall determine their price. The producer can suffer a loss to the tune of his cost of manufacture, but he must recover his cost of transportation and other expenses incidental to selling.

Thus we see that in the case of a short period, there is not much difficulty. But when we come to the long period and to the discussion of the cost of production real difficulty arises.

Joint Products and Long Period Theory of Value. In this case it is difficult to give any definite theory of price. However, some broad principles that underlie the determination of price are given below :—

1. In the first place it should be remembered that the total price of both the products must be equal to the average total cost of producing the parent product. The price can neither be more nor less than the average total cost of pro-

*John McEconomics, p 243.

ducing the parent product. This is in accordance with the general principles that price under perfect competition cannot be more or less than the cost of production. For instance, if we suppose that only cotton seed and cotton fibre are produced out of raw cotton, then it is necessary that the total price of cotton fibre and cotton seeds must be equal to the cost of production of raw cotton.

2. Secondly, the normal value of any one joint product cannot exceed the cost of producing the parent product. Taking the former instance, if we suppose that only cotton fibre and cotton seeds are produced out of raw cotton, then the normal value of any one commodity, say cotton fibre, cannot be more than the cost of raw cotton. For even if we suppose that cotton seeds do not fetch any price and are just thrown away, the price of cotton fibre cannot exceed the cost of producing raw cotton because other producers would then be attracted by the profit arising in this trade and production would increase with the result that price would go down till it equalled the cost of production of raw cotton.

3. Thirdly, the price of a joint product, whether competitively produced or not, must not be less than the direct cost of processing it, for if it was the material from which it is made would be thrown away. For instance, if cotton-seed-oil cannot be sold at a price that covers the direct cost of making oil out of cotton seeds, the oil will not be produced and only cotton seeds will be sold in the market.

Thus we have found out the upper and the lower limits beyond which prices of joint products cannot move. The upper limit is formed by the average total cost of the parent product and the lowest limit by the direct cost of processing the material. The actual would lie in between these two limits.

On the demand side, however, we can lay down another principle which will help us a great deal in determining the price of joint product. The price of each commodity is determined by its marginal utility to the consumers; it is determined in accordance with the principle of 'what the traffic will bear' or what it will fetch in the market.

JOINT DEMAND

Meaning of Joint Demand. Goods are said to be in joint demand when for the satisfaction of one particular want, at least two commodities are jointly demanded. For instance, to satisfy the want of car riding, car and petrol are jointly demanded. Similarly, frame and lenses are jointly demanded in order to satisfy the want of a pair of spectacles. Again, when some production is to be carried on, a number of commodities, are jointly demanded. Jointly demanded articles are also known as complementary goods.

Value and Joint Demand. Some complication is involved in the determination of value of those commodities which are jointly demanded because we do not know their demand schedule separately. For instance, it is easy to find out the utility which a person derives from a pair of spectacles; but it is not easy to find out the utility which he separately derives from the lenses and the frames. How to find out their utilities separately is the main problem which faces us here ?

Marginal analysis helps us to find out the utility of each separately. If the fixed combination is changed and a little more or a little less of one commodity is mixed with the other and then the utility to the consumer is assessed, it will be possible for us to find out the utility of each separately. For instance in a cotton factory we can take one machine as fixed. We can then find out the output when, say, one hundred labourers are employed. Then we can change the proportion of labourers to, say, one hundred and ten. If there is any increase in output, it is due to ten labourers. Thus we can find out the utility of labourers and after that we can find out the utility of machine also by employing similar method. Thus by varying the proportion in which commodities are combined, marginal utility of each can be separately found out.

Determination of Price. The determination of price should not be difficult now. We know the cost of production of each separately. We also know their utilities or demand curves separately. The value is determined by the inter-action of demand and supply curves.

VALUE UNDER COMPOSITE SUPPLY

Meaning of Composite Supply. When the demand for a commodity can be satisfied from a number of sources, the commodity is said to be in composite supply. For instance, beef and mutton, tea and coffee are 'substitutes' for one another. There exists a particular type of relationship between them so that if the supply of one increases and its price falls, the demand for the other shall go down. They are, therefore, also known as 'competing goods'.

Value and Composite Supply. Because goods having composite supply are substitute for one another, the price of each is determined at the point where the marginal utility of each is equal to the price. It is not necessary that the price of both must be the same. It will happen only when they are perfect substitutes for one another. But goods are seldom perfect substitutes. One goods can be substituted for another only to a limited extent. All that can be said is that their prices move up and down together. Thus their marginal utilities move together, although they are seldom identical.

COMPOSITE DEMAND

Meaning of Composite Demand. A goods is said to have a composite demand when it can be put to a number of uses. Thus iron can be used in a factory, in machines, in making bridges, nails, shoe bolts, railway lines, etc. Again, labour can be demanded by a number of factories for a number of purposes. Such goods, having composite demand are sometimes, called 'competing commodities'.

Value and Composite Demand. We already know the principle of substitution or of equi-marginal utility which tells us that a commodity shall be put to a variety of uses in such a manner that the marginal utility of the last unit spent on various uses is the same or nearly so. If the consumers derive greater utility by putting that commodity to a particular use, its distribution shall be diverted more to that use. From this fact we can say that the point of equilibrium shall be that where the price of the commodity is equal to its marginal utility in every use.

PART VI
Theory of Distribution

CHAPTER XXXIX

INTRODUCTION

Without the co-operation of all the factors of production nothing can be produced. Each factor, therefore, has a right to claim a share in the produce raised. The theory of distribution is concerned with the determination of these shares. It is a study of the basis or the principles on which the factors of production obtain their respective shares in what they help to produce.

The classical theory. The classical economists explained these shares in a manner that is regarded as unscientific to-day. We shall presently see how their explanation is defective but let us first take up the explanation itself. When a certain amount of a commodity is produced by the various factors of production, the first claim on the produce, they said, is made by the factor land. Suppose that in producing that commodity the producer has used three plots of land, each yielding 50, 30 and 20 units respectively so that the total output is 100. Then, for the first plot of land which is obviously the most fertile plot the landlord will demand 30 units as his share and for the second he will demand 10, thus claiming 40 units as his entire share out of the total produce. This share is called rent. There is no claim with respect to the last plot, the marginal plot. The marginal land, therefore, pays no rent. Thus we see that the share of a landlord i.e. rent, is in the nature of a surplus that arises because of the difference in the fertility of the various plots of land used by the producer. Had each plot of land produced the same number of units there would have been no surplus and hence no rent. The share of land would have been zero in that situation.

After the share of land has been determined, the question of the share of the remaining factors of production arises. In our example, only 60 units remain to be distributed between the remaining factors 40 having already gone to land. Out of the remaining factors, labour's share is to be considered first. The principle on which labour is to be

paid, some of them said, is that of the subsistence wage. The labourers should be given that much share out of the total produce which can keep them alive. If they are paid more, they would become reckless and produce more children. Their supply would increase and the wages would be brought down till they were at the subsistence level. If they are paid less than the subsistence wage, they would die; their supply to the producer would contract and he would have to increase the wages till they touched the subsistence level again. This trial and error would help a producer to find out the subsistence wage. At first, of course, the producer in ignorance of the proper subsistence wage, would set apart, arbitrarily a certain fraction of the remaining produce for the labourers. This would be called the wage fund. If 35 units is the wage fund and 5 the number of labourers working with the producer, then 7 units would constitute the wage of each labourer. This wage might in the first instance be greater or less than the subsistence wage. But eventually the wage fund must be such that when it is divided by the number of labourers it gives a wage per labourer just equal to the subsistence wage.

Now then, out of 100 units which is the total produce, land gets its share first and that is 40, labour gets its share next and that is 35 and the 25 units that now remain go to the producer as his profit. Thus when rent and wages have been determined, profit (which for the classical economists includes interest also) is automatically determined and needs no separate explanation. Profit turns out to be the difference between the total produce on the one side and the sum of rent and wages on the other. The reason why the classical economists did not concentrate on interest as an independent share lay partly in the small amount of capital in use in their times. There were no large-scale industries needing huge amounts of capital and there was, therefore, no appreciation of the independent place of the factor capital in production.

As has been stated above this explanation* of the classical economists concerning the shares of the factors of production in the total produce appears unscientific in the light of modern developments in the theory of distribution. It suggests that

whereas rent is determined by the marginal land, wages are not determined by the marginal unit of labour ; they are rather determined by the minimum of subsistence. The theory of the determination of rent has, therefore, nothing in common with the theory of the determination of wages; the former has one basis, the latter another. If five authors write out a book of five chapters, each author writing one, it would be absurd to reward the first author on the basis of his language, the second on his logic and the rest according to their substance. Either all must be rewarded for their language or logic, or all for their substance. As with these authors so with the factors of production. There should be a single law or principle on which each factor is given its share out of the total produce.

Another mistake in the classical explanation is its wrong approach to the problem of sharing. Rent is a surplus and hence can only be the last claim on the produce. The surplus cannot be found except after every other share has been subtracted from the total produce. The determination of the shares of labour, capital, etc., must be the first concern of the producer. —

Yet another mistake in the above classical theory comes to light in their explanation of the share of the factor labour. They will let the producer fix an arbitrary wage fund first and then discover the wage per labourer, whereas the right procedure would be to find out the wage per labourer first and then calculate the total wage fund that is to form the entire share of the labourers responsible for the produce.

The modern theory of distribution is free from these mistakes. It is compact and scientific and makes a right approach to the problem of sharing. But what is the modern theory? The modern theory is the familiar theory of supply and demand. According to this theory wages, interest and profit are a price for the factors labour, capital and enterprise respectively. Just as when we want a mango we purchase it at some price from the market, so also when a producer wants to employ a labourer he buys his services from the labour market. The price at which he buys it is called the wage. Services are like commodities and can be sold at their respective prices in the market. And each price—wage,

interest and profit—is like the price of any article determined by the forces of supply and demand. The problem of the determination of the shares of the various factors of production is therefore a problem of the pricing of those factors in accordance with the principle of supply and demand. It is the same principle or basis—that of supply and demand which determines the share of each factor and there are no separate theories as of the classical variety. Nor is there an attempt to determine the total share first and the individual share later as the classical economists seemed to suggest in their explanation of wages. Just as supply and demand help us to find out the price of one unit of a commodity first and the total amount that we have to pay to the sellers is determined thereby, so also do they help a producer first to find out the wage, interest or profit per unit of the factor concerned and the total that he has to pay to each factor is automatically determined. Nor is there any suggestion of the type that land claims its share first, labour next and capital in the end.

The question that arises now is as to what elements lie behind the forces of supply and demand that help to determine the price of a factor? The elements we might say are the same here as in the case of a commodity. On the demand side lies the consideration of utility and on the supply side, the consideration of the cost of production. And price is determined by the intersection of the utility and the cost curves. In the case of a factor also the same elements obtain. The demand of the employer is based on the utility that he expects to get out of the services of the factor; the supply of the factor is based on the cost or sacrifice that its owner would incur while making its services available. The price of the factor would be such that its utility to the employer is equal to the sacrifice of its owner. Thus we say that (at the point of equilibrium) i.e. where supply equals demand, the price of a factor is its utility to the employer the sacrifice of its owner.

Now, the utility of a factor to an employer engaged in production can be measured only by the efficiency with which it contributes to the total produce. That is, it can, in short, be measured by its productivity. And so what really lies

behind the demand of a producer is the productivity of the factor that he employs. And the price of the factor, from the point of view of the producer, must not exceed this productivity. But the productivity of a factor changes as more and more units of it are used in the same employment. Let us suppose that the employer is using 8 units of a factor. If the 6th unit of this factor produces $10x$ while the 8th unit of it produces $7x$, what should the price be equal to, $7x$ or $10x$? Since the employer wants to benefit as much from the factor as possible he will agree to the price $7x$ and not to $10x$ which would involve him in an actual loss. So the price should equal the productivity of the marginal unit of a factor, or to use the familiar phraseology, it should equal the marginal productivity of the factor. At the point of equilibrium therefore the price of a factor the marginal productivity of the factor-the sacrifice of its owner.

Thus the price of a factor is determined by the marginal productivity of the factor on the one side and the sacrifice of its owner on the other ; it should be such that both are equal.

To say that the price of a factor (wage, interest or profit) is determined by marginal productivity only is wrong. For marginal productivity is only one side of the picture. It represents demand. There is the equally important supply side also that is represented by the sacrifice or cost incurred by the owner of a factor in the course of its employment. The price of a factor is, therefore, to be determined both by its marginal productivity and by the sacrifice of its owner. Neither taken by itself can help to determine the price. The sacrifice of the owner on the supply side refers, however, to his marginal sacrifice. A labourer working for 5 hours will demand a payment which is equal to the sacrifice of the 5th hour and not to that of the 1st or the 3rd. Or else he will be a loser. Suppose his sacrifice for the first hour is $5y$ and for the 5th it is $10y$ (it should be remembered that the unwillingness to work goes on increasing with the number of hours and hence the sacrifice also increases). Will he like to be paid equal to $5y$ only ? He will rather like to be paid $10y$, so that on the earlier hours where his sacrifice was less he might gain a surplus. Hence the price of a factor is determined by the

marginal productivity of the factor on one side and its marginal sacrifice on the other

Now arises a question . How can sacrifice be equal to productivity? Sacrifice is a feeling and how can a feeling be equal to yards or seers? If we could measure the sacrifice in terms of yards or seers such an equality can be effected. But, in the world of to-day, the prices of all the things whether they be factors or commodities are paid in terms of money. So instead of measuring sacrifice in yards or seers we measure it in terms of money and likewise we measure productivity also in terms of money. Whatever happens to be the marginal produce of a factor is converted in money and then paid to the factor as a reward for his sacrifice. At the point of equilibrium then, money value of the marginal produce-money value of the marginal sacrifice.

Modern economists use the technique of opportunity cost in measuring sacrifice. In the chapter on rent something has been said about opportunity cost and its importance in the theory of distribution.

CHAPTER XL

INTEREST

Interest is the price paid for the use of the factor capital in production. And like all prices, it is determined by the forces of demand and supply. At the point of equilibrium the rate of interest is such that the supply of capital is equal to the demand for it.

Gross interest and net interest—Marshall breaks interest into two parts. One includes the “earnings of capital simply, or the reward of waiting simply” and is called Net Interest. The other includes “other elements” such as insurance against risk and earnings of management and is called Gross Interest.

The lower the state of commercial security and the more imperfect the organisation of credit, the greater becomes the importance of these additional elements. For in such a situation, the risks of lending are great; and great also are the costs of collection of the loans. Risks of lending, says Marshall, are of two types—trade risks and personal risks. The trade risks “arise from the fluctuations in the markets....from unforeseen changes of fashion, from new inventions, from the incursion of new and powerful rivals....and so on”. The personal risks are those that concern “some flaw or deficiency in the borrower’s personal character or ability”. Since risks differ from borrower to borrower, gross interest also differs from borrower to borrower.

So to a lender of capital, income accrues both for the use of the lent out capital and for his taking risks in lending and maintaining accounts of the payment and the receipt of the loan. “From the point of view of the lender”, says Marshall, income for taking risks and maintaining accounts “is more properly to be regarded as profits.” Net interest tends to be equal for equally long loans in case of all borrowers when the same conditions of competition obtain. As will be seen, even net interest varies much more for short loans than for long loans because the capital available for particular types of loans

varies more than the total quantity of capital. But competition or no competition, for the gross interest, says Marshall, there will be no tendency to be equal every where in a market for it is based on personal considerations of the borrowers who are not necessarily alike. If net interest is not equal in the various parts of a competitive market capital would flow from these places where interest is lower to the places where it is higher till the rate had gone up owing to the shorter supply at the former places and shrunk owing to a larger supply. A tendency towards equality would thus set in. But if gross interest is not equal no such tendency would set in. Where gross interest is high, capitalists would not rush in to supply more capital for the corresponding risk in lending may also be equally high. So gross interest would continue to be unequal even in conditions of perfect competition. We will use the word interest and not "net interest" for the payment made to capital as we proceed to analyse the various theories of interest.

The classical theory of interest—The correct theory of interest is the classical theory which maintains that interest is determined by the supply of and the demand for savings. Saving and capital mean the same thing. What we said in the opening paragraph of this chapter, namely, that interest is determined by the supply of and the demand for capital is, therefore, in complete accord with the classical views. The demand for savings or capital is always for investment only. And so interest is determined by the desire to invest on one side and the desire to save on the other. At the point of equilibrium the desire to invest is equal to the desire to save and investment is, therefore, equal to saving. Keynes who turned a stout opponent of the classical theory in his later years, says, "Just as the price of a commodity is necessarily fixed at that point where the demand for it is equal to the supply, so the rate of interest necessarily comes to rest under the play of market forces at the point where the amount of investment at that rate of interest is equal to the amount of saving at that rate".

Marshall supports the classical theory when he says in Principles., "Thus then interest, being the price paid for the use of capital in any market, tends towards an equilibrium level such that the aggregate demand for capital in that market

at that rate of interest, is equal to the aggregate stock forthcoming there at that rate." The reason why capital and savings cannot be different is obvious enough. One saves out of one's income that could have otherwise been spent on consumption goods. Out of this saving, that might be accumulated little by little, some amount may be kept in the form of money while the rest invested in buying shares, stocks, or such forms of capital goods as a sewing machine. What one saves out of one's income must, therefore, reduce one's consumption for the time being. And since it is invested in some form or the other, it turns into capital. The point to be noted is that there are only two uses you can make of your income. You can either consume it or put it to some other use. If you consume it the act is called consumption. If you do not use it that way and save it, it cannot be said to have been consumed. The amount saved becomes then a factor of production, and has to be regarded as capital. The possible confusion here may arise due to various senses in which the word "hoarding" is used. The money saved and hoarded is not regarded as capital by many. But if it is a hoard in the technical sense it cannot really be regarded as saving. A hoard is that which gives direct satisfaction, just as consumption does. Savings gives indirect satisfaction. If what is saved is not capital it must be treated as giving direct satisfaction and must consequently be regarded as not saved.

Apart from the fact that such a view enables us to see how savings must be identical with capital, it has another advantage that it enables us to classify things into the two categories of consumption factors and production factors. Economics knows of only two activities, consumption and production. Distribution, exchange, and such other activities are mere subdivisions. A hoard must, therefore, be associated with consumption or production. If you call it a saving it has to be associated with production and must consequently be called capital. If you do not wish to call it capital, you cannot associate it with production and consequently it has been associated with consumption. It then cannot be called a saving.

And hence, supply of and demand for capital mean the same as supply of and demand for savings.

The marginal productivity theory—The theory of marginal productivity supported amongst others, by the greatest German classical economist, Von Thunen explains interest as determined by the productivity of the marginal unit of capital in production. At the point of equilibrium, the interest that the producer pays for capital is just equal to the marginal product of that capital. If the rate of interest is less than the marginal product, other producers have a tendency to enter the industry employing more and more units of capital till the marginal product goes down and becomes equal to the rate of interest. When it is greater than the marginal product the producers leave the industry or contract their use of capital till the marginal productivity increases and eventually becomes equal to the rate of interest again.

A glaring defect in this theory is its complete omission of the consideration of the supply side of capital. That productivity is a factor that influences the price of capital would not be disputed. Nor can we question the statement that at the point of equilibrium, the rate of interest must equal the marginal productivity of capital in a competitive market. But this does not imply that productivity of capital is the sole factor responsible for the determination of interest. The marginal productivity is the highest price which the entrepreneur will pay, while the marginal sacrifice is the lower price which the saver will take. The degree of sacrifice that the lender of capital undergoes is also a factor in that determination and must be considered alongside. Interest is determined by the supply of and the demand for capital, the demand of capital depending upon its marginal productivity and the supply depending upon the marginal sacrifice of those who save. At the point of equilibrium, the marginal productivity of investment is equal to the rate of interest which is equal to the marginal sacrifice of saving also. The marginal sacrifice, it is evident, is no less important.

One merit of the marginal productivity theory lies in the fact that it prevents us from thinking that the rate of interest can be negative also. It is true, of course, that in the sense in which the word is used by most of us, interest can become negative. That is what was pointed out long ago by Foxwell and later by Marshall. Since then many economists have

pointed out cases in which the rate of interest can be negative. For instance, when the risk of keeping money in our house is great we would rather pay a banker than demand any payment from him when we deposit our savings in his bank. Such cases are likely in abnormal times. In times of depression and other abnormal times, the rate of interest sinks almost to zero and then it is not difficult to imagine possible cases of negative interest. This point cannot be disputed. All that is necessary to note, however, is that the word interest is capable of having a more precise and technical meaning. In all scientific discussions we should guard against inconsistencies. If we maintain, as all do that the rate of interest equals the marginal productivity, then we cannot say that it can be negative unless marginal productivity itself becomes negative. No producer would, however, allow capital to have negative marginal productivity. Since the marginal productivity must be positive, interest rate must also be positive. What then can we say about the man who pays the banker rather than gets something from him? The man who is willing to pay the banker is one who thinks that his money will be much safer in the bank than elsewhere. He therefore pays the banker for the safe custody of his savings. It is not interest though very often we might find it convenient to call it by that name.

The abstinence theory.—Whereas the marginal productivity theory of interest concentrates on the demand side only, the abstinence theory concentrates on the supply side. Senior, in whose name this theory generally goes in economic literature, was of opinion that interest arises because the lender of capital while abstaining from consuming that capital sustains a sacrifice. Interest, thus, is a reward for the sacrifice of consumption that a capitalist has to make when he lends his capital. Voltaire ridiculed the idea, saying that the wealthy man never abstains from anything and never waits a moment to satisfy his wants. Marshall preferred the word "waiting" to "abstinence" because to him abstinence implied a deeper sacrifice which rich lenders of capital did not often make, and because the consumption was often only postponed. According to Marshall, it is only the poor, and those who are just beginning to save who have to practise abstinence in what they lend; for it is their sacrifice that is really deep. Others maintain that the whole concept of sacrifice is merely

the foresight to accept present loss for greater future gain, so that interest is merely a reward for foresight. Still others that interest represents the chance that neither the lender nor his children will be alive to enjoy the future at the end of a year. All those concepts involve us in some sort of sacrifice just as much as abstinence? What matters in understanding the cause of interest is the idea of sacrifice and not the degree of it. Waiting, abstinence or even forbearance which word Seligman used in place of abstinence, all convey the idea that interest is a reward for some sacrifice. To us they are all equally acceptable.

As said above, this theory is no less one sided than the marginal productivity theory—only that its consideration shifts on to the factor governing the supply of capital rather than its demand. It states a partial truth.

The theory, however, has been a potent argument against the idea that interest as a production cost is unjustified. Marx for example, was of opinion that the interest paid to the capitalists cannot be justified in any way.

We can prove to the followers of Marx that this is not so. A capitalist is one who lends capital and therefore abstains from present consumption. And we must reward him for the sacrifice of his abstinence or else he would not lend capital and production would be impossible. Even a socialist state has to wait and if it forces labour to wait for consumer's goods it is actually for them to pay interest.

The agio or the time-preference theory.—Yet another theory which suffers from the weakness of being one sided is the time-preference theory of interest. Whatever might have been the views of those who gave us this theory, in substance it resembles the abstinence theory. The time-preference theory states that interest arises because the lender of capital has a preference for the present over the future. Bolin-Bawerk who first popularised this theory believed that if a man was asked whether he would like to consume a certain amount of goods of a given kind and quality at the present time or in the future, he would express his preference for its consumption in the present. Present goods, therefore, would come to

acquire for a man a premium over future goods of the same amounts, kind and quality. This is what has been described as the agio theory of interest, Agio means premium. And so interest, according to Bohm-Bawerk, arises because the capitalists forego consumption of present goods which have premium over future goods and interest must make good this loss of premium. The reason why the present goods enjoy a premium over future goods lies in the fact that the future is not completely certain and hence the present looks more attractive to man than the future. The present wants are thus felt more intensively and the demand for the present goods becomes greater than the demand for future goods. The present goods, therefore, become more scarce in relation to demand and hence more valuable than the future goods.

Fisher, a student of Bohm-Bawerk, criticised his master's theory and gave, instead, the time preference theory of interest. It need not be said that Fisher's theory is only a restatement with a slight improvement of his master's theory. Throughout his entire analysis of that "agio" which determines interest, Bohm-Bawerk assumes time-preference on the part of the individual. Bohm-Bawerk's interest would not arise without time-preference, just as much as Fisher's interest would not arise without it. Hence both of them are depending upon the same factor for determination of interest.

What you would ask now is the exact implication of time preference? "Time preference" means only this much that if a man is offered 10x amount of income in the present and the same 10x amount of income in the future, then he would prefer to have 10x at the present rather than in the future. When he is offered 10x in the future, the value of that 10x to him at this time would be less than 10x; it would be, say, 8x only. To the extent of 2x, therefore, the man is said to be discounting the future income. Or which is the same thing, to the extent of 2x the man is said to be preferring the present income to the future one. If then this man foregoes his enjoyment of this 10x income at present and lends it as capital to a producer, his sacrifice of time-preference must be met by the rate of interest. When he is paid 10x plus

2.5x i.e. 12.5x units of income in the future he would readily agree to part with the 10x units of income in the present. For, in that situation the 12.5x units of income in the future would appear to his eyes as having the same value as 10x units of income at this time if 2x per 8x is the rate of his time preference. But he would not accept 10x units of income in future as against 10x units of income at present.

This explanation is based on two assumptions. First, the purchasing power of money is to be constant. Secondly, there is to be no change in the circumstance of the lender.

If it is expected that money in future would buy much more than what it does at present, 10x of income would be preferable in the future rather than in the present. Also if the lender expects to lead a life of simplicity in the future 10x of income to him would be much more satisfying in the future than at present. It is only when the two said assumption obtain that we can say that 10x of income would be preferable at present rather than in future. If income, however, refers to real income, then we can afford to dispense with these assumptions also. For in that situation the purchasing power of money and the circumstances of the lender are automatically considered.

Rate of interest always positive.—Fisher cites cases in which the rate of interest can be zero or negative. He establishes first the fact that rate of interest and time-preference must be equal when the position of equilibrium is reached. That, of course, cannot be challenged. He then goes on to show that when time-preference becomes zero the rate of interest must automatically become zero also. When proving this Fisher understands by zero time-preference the situation in which a person is indifferent between having a certain sum of money or a certain quantity of a thing now and in the future. Such cases are certainly imaginable. But this does not show that time-preference is negative. For, as Fisher himself points out in the earlier sections of his book, a person is said to have time-preference only when he shows preference for a certain amount of *satisfaction* now over an equal amount of satisfaction at a distant date. All have maintained in some way or the other that human beings prefer the present to the future.

Psychology maintains the same thing. This pure time-preference manifests itself when a man prefers a certain amount of satisfaction in the present to the same amount in the future. The rate of interest equals this pure time-preference. And since time-preference so understood is always positive, the rate of interest is also always positive.

It is unfortunate that Fisher should have used the word time-preference in two senses as shown above. It leads to confusion of thought. Whenever one acts against time-preference there is sacrifice. Interest rewards it. When a man prefers a certain amount of money in the future to an equal amount now, he does so only because he expects to derive greater utility from it in the future. Had that not been the case he would have preferred to have the income in the present. There is no sacrifice in waiting to consume something which during the period waited for increases in utility. If by waiting you increase utility from 100 to 150, you would certainly decide to wait. But you wait then for the extra 50. You would have preferred to have the 150 all at once that is, in the present. The very fact that the present worth of any satisfaction is always less shows that time-preference is always positive. The rate of interest must, therefore, always be positive. But as we have already said earlier, if we were to use the word interest in its more popular sense it can be negative also.

Marshall also has stated that the rate of interest can be negative. For example, he says in his Principles that when "the new openings for the advantageous use of accumulated wealth in any form were so small that the amount of wealth for the safe custody of which people were willing to pay would exceed that which others desired to borrow" and hence "in consequence even those who saw their way to make a gain out of the use of capital, would be able to exact payment for taking charge of it," "interest would be negative all along the line." What Marshall has in mind is the setting apart of a certain sum of money by the people to provide for their old age contingencies and for their children. Sometimes, he says, the desire for setting apart this sum is so great that people would not mind paying even some charges for its security. In such a situation the people who save money, instead of getting a payment for their savings, have to part with some charges for their security,

thus causing the rate of interest to become negative. We can question Marshall whether savings in such a situation can at all be called savings in the proper sense. Savings always imply some sacrifice. Where is the sacrifice in case of the people whom he talks about? If sacrifice had been there, they could have wanted a payment rather than made it from their side. The fact of their payment, implies that they are obtaining some direct satisfaction from their hoarded amounts. Or else why should they pay? This confusion between hoarding and savings is evident in the Keynesian theory of interest also. We shall take it up at its proper place. Meanwhile we set ourselves to seeing what the Keynesian theory of interest is.

The liquidity-preference theory. Keynes was of opinion that interest was determined by liquidity-preference. When an individual gets an income, he has first to decide how much he should spend on consumption and how much he should not. Suppose his income is 10y, and he has made the decision that 6y he should spend while 4y he should not. Yet another problem crops up to him now. Should he keep this 4y income in the form of liquid cash so that he could spend it any time he likes to satisfy his wants, or should he lend it to someone only to get it back after a certain amount of time? If he wants to keep this 4y income in the form of liquid cash he cannot lend it to anyone; if lending is what he likes, he cannot keep it in the form of liquid cash. Not lending implies that the man in question has a preference for liquid cash. Lending implies that he wants to part with that income which he could have otherwise kept in liquid cash with him. As a rule of nature, says Keynes, men prefer to have a ready command over goods and therefore keep money in a liquid form rather than lend it. It is implied in the nature of men, therefore, that they have "liquidity-preference". Interest can arise only when there is a "liquidity-preference". But since a loan would be made only when the man who is to lend has sacrificed his liquidity-preference (i.e. when he has deliberately curbed or suppressed his natural desire to keep his residual income into liquid cash rather than in the form of capital) interest would arise only when there is a sacrifice of liquidity-preference. "Rate of interest" Keynes says, is thus "the reward for parting with liquidity for a specified period". It is the reward for sacrificing the natural desire for liquidity;

it is a reward for sacrificing liquidity-preference. The greater the desire of a man to hold liquid-cash or what is the same thing to have liquidity the greater will be his liquidity-preference. And if then he lends or which is the same thing parts with liquidity, the greater will be his sacrifice of liquidity-preference and the greater the interest that he would be demanding on his loan. "The rate of interest at any time, being the reward for parting with liquidity is a measure", says Keynes, "of the unwillingness of those who possess money to part with their liquid control over it." The rate of interest is thus influenced by liquidity-preference.

The intensity of the desire for holding liquid cash or the degree of liquidity-preference depends upon the motives for which men want such cash. These motives are of three kinds. The first is the transactions motive which implies the need of cash for current transactions connected with personal and business exchanges. Next then is precautionary-motive which results from the desire for security as to the future cash equivalent of a certain proportion of total resources. The lenders fear that when they are paid back their loans, the value of the loans at the time of repayment, might go down owing to changes in the purchasing power of money. The final motive is the speculative-motive which arises from the object of securing profit from knowing better than the market what the future will bring forth. Men, oftentimes, do not lend to-day and hold back their liquid cash probably because they think that interest tomorrow would be higher and so would bring them higher returns on their loans.

When people decide to part with a greater amount of liquidity the amount of cash in their own hands goes down and so the total amount of liquid money existing in the community becomes smaller. The opposite happens when the amount of money that is parted with becomes smaller and people have bigger amounts of liquid cash in their hands. Thus "the parting or not parting with liquidity diminishes or increases the present quantity of (liquid) money". When a certain rate of interest is given, people adjust their liquidity-preference to it and the moment they have decided what liquidity they would hold and what they would not, the quantity of liquid money is also automatically determined. Under a given rate of interest, liquidity-prefer-

ference, therefore, determines the quantity of money. And it is here and in this way that the quantity of money enters into the economic scheme.

As against the classical writers who said that interest is determined by the supply of and demand for savings, Keynes maintained that interest was determined by the supply of and the demand for liquidity. The demand for savings depends upon their marginal productivity. And on marginal productivity depends the demand for loans too. Hence in so far as the demand side of the picture of the forces that determine interest is concerned, classicals and Keynes both agree over the fact that marginal productivity is what eventually matters. "Equilibrium comes about", says Keynes "where marginal efficiency of capital, in general, is equal to the market rate of interest". And this marginal efficiency of capital is nothing but the marginal productivity of the liquidity that is lent out or the marginal productivity of the savings of the classical economists.

Disagreement arises, however, when Keynes comes to explaining supply side of the forces that determine the interest rate. The classical economists said that supply of capital depends on the extent to which interest corresponds to the sacrifice of saving. If the sacrifice of saving is higher than the rate of interest, savings would contract and supply of capital will go down. If the sacrifice of saving is less than the rate of interest, savings would expand and the supply of capital would go up in the same proportion. At the point of equilibrium, they said, interest must equal the marginal sacrifice of saving.

Keynes objected to this analysis. For example, he said. "It is not certain that the sum saved out of a given income necessarily increases when the rate of interest is increased." To him there is no correspondence between interest and the sacrifice of saving. In fact there may be no interest offered, and yet a man would save for he cannot, perhaps, spend all his income. Saving, therefore, is independent of interest. What is not independent of interest is not saving but lending. What a man would lend out of his saved income is what the rate of interest will have an influence upon. If the rate of inter-

est is high, out of a saved amount of 4y, he may lend as much as $3\frac{1}{2}y$ but if the rate of interest is low, he might lend only 1y. 4y which the man has saved continues to be the same despite a changing rate of interest but the amounts to be lent do change under a changing rate. And so it is wrong, thinks Keynes, to say that the supply of savings has any connection with the interest rate. What has such a connection is the supply of lending. And at the point of equilibrium the rate of interest should equal the marginal sacrifice of lending, not of saving. Interest from the supply side would be determined by 3y or 1y, as the case may be and not by 4y; it should not equal the marginal sacrifice of 4y; but that of either of the former two amounts.

It might frankly be stated that Keynes has wrongly interpreted the classical notion of savings. The classicals would never call 4y as saving or capital. To them only that amount of income is saving or capital which is not consumed. If a man has decided that out of a residual income of 4y, he should keep $\frac{1}{2}y$ or 3y in his own hands for the respective sums cater directly to his want for liquidity we would say that $\frac{1}{2}y$ or 3y are being consumed by him. And it is only $3\frac{1}{2}y$ or 1y which he parts with and does not keep for catering to his want of liquidity and hence for his direct satisfaction which would rightly be described as the "not-consumed" income or the savings of the man. This shows, therefore, that the lent out liquidity of Keynes is nothing different from the "savings" of the classical economists. And whether we say that the lent out liquidity works on the rate of interest from the supply side or we say that there are savings that work there, we are evidently talking of the same thing under two different tables. The Keynesian analysis of the supply factor in interest is also the same as the classical analysis.

But there is one vital difference between Keynes and the classical economists. The Keynesian theory applies to the supply and demand of money savings or money capital only whereas the classical theory would apply to non-monetary capital also. In Keynes interest is a reward for parting with liquid capital only; in the classical writers, it is a reward for parting with any form of capital. The Keynesian theory of interest would apply to a society where people use money;

the classical theory can apply to a moneyless society also. The Keynesian theory assumes that a man should lend capital to someone other than himself. For then alone we could say that he has parted with liquidity. The classicals do not make any such assumption. Even if a man does not necessarily "part with" his savings but uses them in his personal productive enterprises, the classicals would say that interest will arise. The Keynesian theory will fail to explain a Robinson Crusoe; the classical theory would not. It would immediately point out that liquidity or no liquidity, lending or no lending, since Crusoe would have to produce many things for consumption, he must have capital and hence must save and incur a sacrifice in saving and hence must receive a benefit commensurate with this sacrifice. And this benefit would what be called interest on Crusoe's capital.

We can then say this with respect to the Keynesian theory of interest that though it is not wrong for its basic analysis is the same as the classical one, it is essentially a narrow theory in its scope and cannot apply to the same area which the classical theory would embrace.

Prof. Ohlin has suggested that interest is determined by the supply and demand of credit rather than of savings. We might lend more, he thought, than what we had saved. And the producers too might demand more than what they would really invest. They might need credit for consumption purposes also. We can point out here again, as we did in the case of Keynes, that rightly interpreted, Ohlin's credit would mean nothing beyond savings. And so no material difference can there be between Ohlin's statement and the classicals.

No clash between the various theories of interest. It would be interesting to note that not a single theory of interest out of those given above clashes with the classical theory which alone is the correct theory of interest in economic literature. That a particular theory might be one-sided and only a partial-truth is a different matter. But none is completely wrong or does not harmonise with the classical theory. The Keynesian theory except for its narrow scope becomes almost

identical with the classical theory. The marginal productivity theory is, we might say, one of the two legs on which the classical theory stands. The classicals too admit that interest, from the side of demand, is determined by the considerations of marginal productivity of savings. The time-preference theory explains the element of sacrifice which all savings according to the classical economists must inevitably involve one in. Without time-preference there would be no sacrifice, and without sacrifice classicals would not explain the supply side of capital. So the theory of time-preference is at the root of the classical concept of savings on which interest depends.

Even amongst themselves the theories do not clash. The abstinence theory has the same base, that the time-preference theory or the liquidity-preference theory has. Why is there sacrifice on abstaining from consumption in the present? Because we have a feeling that whatever satisfaction is to accrue to us should better accrue to us to-day rather than to-morrow. In other words we have a preference for the present over the future. If such a preference was not there, what hitch would we have in postponing our satisfaction to some future time?

The same preference with respect to time lies behind liquidity-preference also. When a man says that he wants to hold a certain amount of cash with him, what he has in mind is the fact that he would then be able to satisfy his wants at once without waiting for any time. He does not want liquidity for its own sake but for the sake of getting prompt satisfaction without having to wait. What else is this unwillingness to wait if it is not a manifestation of that natural feeling that a given satisfaction in the present is preferable to the same satisfaction in the future?

WAGES

Real and nominal wages. Wages are the price paid for the use of the factor labour in production. They are of two kinds, *real-wages* and *nominal wages*. Real wages comprise the sum total of the psychic satisfaction of a labourer whereas nominal wages refer only to his money income. As Adam Smith says "the real wages of labour may be said to consist in the quantity of the necessities and conveniences that are given for it, its nominal wages in the quantity of money. . . . The labourer is rich or poor, is well or ill rewarded, in proportion to the real, not to the nominal, price of his labour" This, however, should be kept in mind that even those conveniences which are not given in exchange (as Adam Smith seems to suggest) for labour but are incidentally attendant on the work are also to be included in the total of real wages of the labourer.

Real wages depend upon a variety of factors. One such factor is the purchasing power of money on which eventually depends the quantity of the 'necessaries and conveniences' which a labourer can buy. But in assessing this purchasing power allowance must be made for the differences that arise due to the different items of consumption in a labourer's budget. The general purchasing power of money might have gone up owing to a heavy fall in the price of some of the items of consumption of the higher classes of society. And it would obviously be a wrong statement then to suggest that the real wages of labourers have also correspondingly increased. For, so far as the money income of the labourers is concerned it continues to purchase the same amounts of barley or gram as it did before.

Another factor in the consideration of real wages is the current trade expenses of the labourer. "Thus from the barrister's gross income" says Marshall "we must deduct the rent of his office and the salary of his clerk, from the carpenter's gross income we must deduct the expenses which he incurs for his tools" and so on.

Then, we should also make allowance for the fact that sometimes the food and lodging that an employer provides to the labourer do not give them satisfaction in proportion to their cost. In such a situation the employer would think that his payment of real wages was high whereas the labourer would say that he was receiving low real wages. Were the labourer to be paid in money he could spend it on less costly varieties of bread and house. Then the expenditure thus economised might have enabled him to purchase some other things also, maximising thereby his total satisfaction and hence also his real wages. What should be considered is the labourer's own estimate of real wages and not what the employer has really spent upon him.

For the same reasons it might happen that an employer who pays Rs. 1000 to his labourer but under whom the labourer's tenure of employment is uncertain and full of risks does not actually pay the real wages that he thinks he does. If the labourer is of a wary nature, Rs. 200 to him but with a promise of regularity or constancy of employment might mean greater real wages than Rs. 1000 with no such promise. If he is of an adventurous spirit the latter amount might mean greater real wages. And the temperament of the labourer in relation to the fact of regularity of employment is a consideration of importance in determining real wages.

Often times it happens that a labourer with prospects of extra earnings for himself gets higher satisfaction from his wages than he would without any such prospects. Again when a labourer goes about doing a job in which other members of his family can also be absorbed, the psychic satisfaction of the labourer and hence his real wages might be higher than what would appear on the surface. The scope of such jobs, however, is becoming increasingly limited except in the case of agriculture, where chances of the absorption of a labourer's family still remain.

The condition under which the labourer performs his duties is a potent factor in the determination of his real wages. The growth of strikes in the labour ranks for extracting concessions on the score of better working conditions

is itself an ample testimony of the importance of this factor. Working conditions refer to the number of hours a labourer has to work and also to the recreational, educational and other facilities provided by the employer. When a labourer has to work in an ill-ventilated, hot and unhealthy factory, he often finds his satisfaction greatly diminished. Conditions of employment thus affect his estimates of the real wages he earns.

Evidently enough, all the factors that the consideration of real wages involves are, essentially related to the personality of the labourer. For in the ultimate analysis, it is this personality alone which counts in the determination of a labourer's psychic satisfaction. And psychic satisfaction is correlated to real wages. But since personalities differ from man to man, the real wages of labourers are bound to be widely different despite absence of all divergences in the nominal wages earned by them.

The comparison of real wages as between two periods of employment of the same individual or as between two places is a difficult task. So is also difficult the comparison as between two labourers working in the same place and at the same time. But whereas in the latter case the external factors of working conditions and purchasing power of money might be almost the same, and allowance has to be made only for personalities, in the former case, allowance would have to be made for both. The attractiveness of a trade depends chiefly upon the amount of real wages that it offers to those labouring for its success. And in order to know the impact on the supply of labour of a particular occupation, it is these therefore, that we must keep in mind.

The forces of demand and supply that go to determine the price of labour like that of any commodity are influenced by some special characteristics of labour which in the case of commodities are either completely absent or exist only in a very inconspicuous form. Such characteristics are what are often labelled as peculiarities of labour. Marshall points out five such peculiarities, and his list is almost exhaustive. The first peculiarity is that "the worker sells his work; but himself remains his own property".

Those who bear the expenses of rearing and educating him receive but very little of the price that is paid for his services in later years. He who spends money in building a house can claim that house as his own but he who has spent money in giving technical training to his son does not get in full the income that he earns. This peculiarity results in the fact that the supply of labour comes to depend, along with other things, on the forethought and unselfishness of the labourer's parents.

The next peculiarity of labour is "that when a person sells his services he has to be present himself where they are delivered". And so the environments in which a labourer works become an element of importance in its supply. This peculiarity also results in the difficulties of migration as a hindrance to the adjustment of the supply of labour to the demand for it.

A third peculiarity which for reasons of its being common to many material commodities also, would appear less outstanding than the first two, arises from the closely connected group of facts that labour is "perishable", that the sellers of it are commonly poor and have no reserve fund and that they cannot easily withhold it from the market. A worker who idles to-day loses on the lost hours which would never come back to him in future. And hence his anxiety not to lose time and the handicap that he has to accept a job for a lower wage than the one he could earn later if he could wait. The handicap on account of a weak bargaining power arises also from the fact that a labourer generally has no hoarded amounts on which to live in the period of joblessness. Two facts result out of the labourer's handicap in bargaining; his wages become low and his efficiency is affected. And when this happens his bargaining power becomes weaker still.

The fifth peculiarity of labour consists in the fact that considerable time is required to prepare and train labour for its work and when the training is over, the returns from its use are only slowly realised. Adam Smith compares a labourer on whose training a heavy sum is spent to an expensive machine erected at a heavy cost. Just as the machinery when put to

use brings back to its owner not only the money that was spent in its erection but charges of depreciation and some profits also, similarly the labourer when he gets on to his work after training earns all his earlier costs of training with additional profit. And in this respect labour and machines appear almost the same. But as Marshall has pointed out the period over which the earnings are spread is longer in case of men than of machines. And, therefore, the adjustment of labour supply to its demand is slower and more imperfect than of machine supply to its demand. And hence the possibility remains that when men have trained themselves, say for clerkship, in some ten years' time the demand for clerks when they are ready for that office, might have greatly declined.

All this, however, is to indicate merely that peculiarities of labour have a strong impact on the ease or difficulty with which the supply of labour gets adjusted to its demand. There should not be any misunderstanding of the type that since labour has certain peculiarities of its own, which are not generally found in other factors of production, the price of labour is differently determined.

The older theories of wages. The older theories of wages went wrong partly because they were unscientific but partly also because the economists concentrated their attention too closely on the peculiar nature of the factor labour. Some economists, for example, said that if more wages were given to labourers, they would become reckless and the population would increase till wages sank to the subsistence level. Wages thus must inevitably equal the minimum of subsistence. For purposes of price-determination, it might be repeated again, the same theory of supply and demand would apply here too, as it does in the case of all other prices. But more of it later on. Meanwhile we take up the various important theories of wages which have been propounded from time to time.

The "iron" or natural law of wages. The theory of the "iron" or "brazen" law of wages, to which reference has just been made, rests on the belief that wages are determined by a natural law the operation of which necessarily brings them down to the level of the bare necessities of life. The

theory was first formulated by the physiocrats who after having seen the condition of the French labourers living on such bare necessities concluded that nature itself was working out wages to the subsistence level. Ricardo gave support to this law when he said that if wages exceeded this minimum of subsistence, labourers would multiply, population would increase causing an increase in labour supply and wages would be brought down. If the opposite happened, he said, labourers would die, labour supply would contract and wages would rise till that touched the subsistence level again. Ricardo's extreme language gave rise to the impression that the price of labour estimated in food and necessities is, perhaps, absolutely constant and wages thus were rigidly fixed for all times. Hence the name "iron" or "brazen" law given to his theory by German economists. Marshall is of the opinion that "Ricardo was not only aware that the necessary or natural limit of wages was fixed by no iron law, but is determined by the local conditions and habits of each place and time. he was further keenly sensitive to the importance of higher "standard of living".

This controversy apart, we can certainly maintain that the belief that wages tend to equal the minimum of subsistence is completely erroneous. The very assumption that it is natural for population to increase with increase in wages from which the natural law of wages seems to have derived its name stands falsified by the history of the growth of human population in the course of these last two centuries. Often times, in fact, it is the opposite tendency which has been in evidence namely that when high standards of living have come to prevail, population has rather diminished owing to enlightenment of ideas and also to the emergence of that oft-repeated choice between "a baby and a car" in which the former is surrendered in favour of the latter.

And then there is the question of the efficiency of labour itself. To suppose that wages would never rise above the level of subsistence is to deny place to the working efficiency of the labourer. True it is that in a large number of cases such efficiency would disappear if wages continued to remain at the subsistence level for long and hence need not be considered. But in other cases, at least, it is sure to play an important part

either because the labourers are specially gifted or they are more enduring and diligent than others. A few inventions emanating from a few minds can revolutionise production, adding so many times to the total produce and to the share of labourers which had rested on the subsistence level only a short while ago.

The natural law of wages fails to explain why labourers throughout the world are earning different amounts of income; it also fails to explain why labourers at the same place and time are earning such amounts. Howsoever backward a society, labourers belonging to higher grades earn higher income than those belonging to lower grades. If all labourers must get bare necessities of life, all must get the same amount of wages. And yet this does not happen in real life. Wages in real life are conditioned more by circumstance than by a natural law.

The chief weakness of this "natural law" lies in the fact that it gives no recognition to the fact of productivity which, according to the correct theory of wages, is the regulator of the demand for labour and hence one of the two forces on which the price of labour depends. The law seems to consider the supply side only and is therefore one sided.

The standard of living theory. In view of the objections pointed out above, some economists have maintained that wages are determined by the standard of living of the labourers. Thus determined they are neither constant nor independent of the efficiency of the labourers. It is stated in support of this theory that when the labourers are paid wages above the bare necessities of life (and it is assumed here that the habitual standard of living of the labourer would be so much above this bare minimum that he may also provide for his and his family's education, recreation and so forth) their efficiency increases. And hence the higher payments of the employer might be more than compensated by the increased productivity of the labourer's work. Another factor working in this direction is the increased bargaining power of the labourers. When labourers get more than the bare necessities, they are likely to save a part of their earnings. And with this reserve in their possession they are better equipped to fight

against their employer for wages that may enable them to live up to their standard of living.

It would not be disputed that the standard of living has some impact on both the demand and supply of labour. But this impact is essentially remote or indirect. Even if it had been direct, it would not have warranted our saying that wages are determined by the standard of living. Wages are determined by supply and demand of labour the conditions of which we might say, are affected in many ways by the standard of living of the labourers concerned.

If wages are determined by the standard of living they should not change frequently. For a standard once established continues at its level for some time. But frequently it is found that in the short span of a few years, the wages of the same man widely fluctuate despite no substantial change in his standard of living.

Alongside this statement that the standard of living determines wages we can make a further statement that wages determine the standard of living of the labourers. And if this is so, the theory we have just examined is only partially correct. In fact it leads to a question which is difficult to answer, namely which of the two phenomena is the cause and which the effect?

J. S. Mill and the Wage Fund. John Stuart Mill explained wages as being dependent upon what the employers arbitrarily set apart for payment to the labourers. An employer or producer, according to him, decides to spend on labour a certain amount of money out of his saved capital which has come down to him from past incomes. This amount set apart from the saved capital is called the wage-fund. Since savings have, generally, a slow growth, the wage fund which comes out of savings remains almost unchanged after it has once been fixed by the employer. The final fixation of the wage fund, say some economists, is done on the principle of subsistence-wage equilibrium wage-fund being the amount which when divided by the number of labourers gives to each a wage just sufficient to help him and his family to live. Now since the wage-fund is almost constant, wages would vary inversely with the popu-

lation. If the population increases (and along with it the supply of labour) the fund remaining the same, wages per labourer would go down. The opposite would happen when population is decreasing.

Wages thus are determined by the amount of wage fund on one side and the number of labourers on the other. But since the volume of the wage-fund depends upon the amount of capital with the employer and the number of labourers depends upon population, wages turn out to be determined by "the proportion between population and capital." "By population", says Mill, "is here meant the number only of the labouring class or rather of those who do work for hire; and by capital only circulating capital and not even the whole of that but the part which is expended in the direct purchase of labour."

This theory implies that the worth of the work done by the labourers has no influence on wages. Whatever be his efficiency it would not influence his wages in any way; at least it would not have any direct influence. In the sense that efficient labour in the past, might have helped to produce profits for the employer, a part of which was used as circulating capital and had thus to form the "wage fund" the efficiency of labour might be said to exert an influence on wages. Mill recognises it, too. But this influence is so remote, he thinks, that we could easily neglect it. To any one familiar with the rudiments of the modern theory of value, non-recognition of labourer's efficiency and hence of what he helps to produce is unthinkable.

The theory moreover has indications of confusion between its statement and explanation. Mill said, for example, that wages are determined by the supply and demand of labour, demand of labour itself depending upon the amount of capital. It might be asked here if capital can be expected to play any vital part once it is recognised that the wage fund is almost a constant amount. In such a situation it automatically comes out that wages are determined by the supply of labour alone. In fact we might question if there remains any need for explaining wages through the wage fund at all if wages must equal the minimum of subsistence in the long run.

The theory thus gives rise to confusion. In its more vulgar and extreme form, it seems to suggest that wages are deter-

mined by (demand of labour) capital only, for capital alone is what will be used in the direct hire of labour. In a less vulgar form it gives the impression that wages are determined by the supply of labour and when the "minimum of subsistence" is brought into the picture, the very existence of the theory would seem to be unnecessary.

Moreover to determine a wage fund first and then to determine wage per labourer is very unscientific. We should first find out the wage per labourer and then calculate the wage fund.

A labourer's wage, it might be pointed out, is often-times pushed up because of the presence of competition between the employers. How will the wage-fund theory explain such fluctuations? It was gratifying, however, that later in his life, Mill completely discredited the wage-fund theory.

The residual claimant theory. Prof. Walker explains wages in a different manner. The products of industry, he says, are to be divided into four parts—rent, interest, profits and wages. The first three shares out of these four, he thinks, are fixed by economic considerations independent of the products of industry. And labour alone is left as "the residual claimant" to the product in the end. If a piece of land is producing 50 units of a commodity, and the output of the marginal land is 20, then 30 units go as rent to the landlord. Had the marginal land's output been 40, rent would have been 10 only, instead of 30 and so on. Thus rent is independent of output. So is interest. Interest should be "high enough to induce those who have produced wealth to save it". Assume that 5 units are enough to induce savings, then 15 units are what is left to be given to the entrepreneur and the labourer now. Profits, according to Walker, are determined in the same way as rent. Just as there is a marginal land so is there a marginal entrepreneur. If the marginal entrepreneur helps to produce 10 units, then $(15 - 10)$ units i.e. 5 units would be left as residue to the labourer. From the total produce we deduct the combined shares of land, capital and enterprise; that which is left over would go to labour. And that is how, says Walker, wages are determined.

This residual claimant theory is also wrong. If profits can be determined by the help of the marginal entrepreneur, why cannot the wages too be so determined? In Walker's explanation we can by arguments similar to his prove any share out of the total produce as a residue. Rent, profits and wages should be, we can say, determined first with the help of the margin and then that which remains will go to the capitalist. And so on with the share of each factor.

Moreover, his statement that rent, profits and interest are fixed by economic considerations independent of output might easily lead one to think that when the output is enlarged the shares going to the factors of production other than labour would remain more or less constant.

The chief error in this theory, however, lies in its ignoring the vital part which the supply of labour plays in the determination of wages. And in so far as it makes no recognition of any direct influence exerted by the productivity of labour on the demand for it such as the modern theory recognises, it seems to ignore the demand of labour also in the problem of wage determination.

★ *The marginal productivity theory.* Yet another is the theory of the marginal productivity of labour. It suggests that wages should be determined by the marginal productivity of labour and equal it at the point of equilibrium. The theory, as is obvious, is very one-sided. For it gives no importance to the sacrifice which labourers exert in production. And thus it is theoretically unworkable also. If we were asked to work out wages on the basis of this theory on a diagram, since we would have only one curve—that of marginal productivity of labour and no other, we would not know at which point to stop. In other words, an employer even when he pays wages equal to marginal productivity would not know how many labourers he should use. And so equilibrium position may not be achieved. That at the point of equilibrium wages must equal the marginal productivity of labour is an absolutely correct statement. But how to find out this point of equilibrium? And here it is that this theory fails.

The theory of the discounted marginal product. Taussig explains wages in yet another manner. His explanation is based on the assumption that labour takes time to produce. If this is so, then the income to the producer from the commodity that the labourer has helped to produce would accrue only after some time. The proper payment to the labourer should ordinarily take place only when what he has produced has brought an income. But the labourer must be paid immediately or else he would starve. So the common practice, says Taussig, is that the employer, who is a capitalist also, pays out of his capital advance wages to the labourer. These advance wages are not equal to the payment which the labourer would have got had he waited for two months. They are less than this payment by the amount of interest which the capitalist could have earned in these two months on the advanced amount if instead of having advanced it to the labourer he had lent it out as capital. The payment to the labourer after two months, according to Taussig, would be determined by the forces of supply and demand. It would be such as to equal his marginal productivity. Since the interest is deducted by the capitalist on the advanced amount the actual payment to the labourer in conditions of equilibrium does not *equal* his marginal productivity but is *less* than it by the deducted amount of interest. The labourer thus gets reduced or discounted marginal product. Equilibrium wages, therefore, equal the discounted marginal product of the labourer.

Now, this explanation in so far as it suggests that at the point of equilibrium wages are equal to the marginal productivity of labour, is perfectly all right. But when it comes to dealing with making of advances and the discounting of the product, it becomes useless. If any discounting is done, and any advance made, we would say that the wage of the labourer continues to be equal to his marginal product; only that, out of this wage he pays out some interest which his employer might have got any where else had he not given him his wages before time. For the reason that *A* gives 200 out of his 500 rupees income in payment of his taking a loan, we would not say that *A*'s remuneration is Rs. 300 only. So also in the case of the labourer. The fact of his paying interest does not imply

that the labourer's wage is less than his marginal product. Taussig takes useless pains in explaining this discounting process; it makes no difference to labourer's right share in production.

Moreover this process is in evidence in case of all other factors besides labour. Will not an entrepreneur also wait for two months to get his profits? Will he not eat during this time, and for that purpose borrow from the capitalist? Will he then not pay out of his profits the capitalist's interest? Will not his profits too, like wages, stand reduced or discounted in that situation?

The modern theory of supply and demand. It will suffice for us to say that wages being the price of labour are determined like other prices by the forces of demand and supply. At the point of equilibrium they are such as to equate these forces to each other. The buyer of labour at such a point gets an amount of benefit from its use equal to the price that he pays for it; the seller of labour i.e. the labourer gets a remuneration sufficient to compensate him for his sacrifices. Since the benefit of the buyer of labour consists in the marginal productivity of labour, he will not pay a price greater than this marginal productivity; if he did so, to the marginal unit he would be paying more than what that unit gives him. And this goes against his self interest. He will dismiss such units rather than have them at a loss. When he does this two tendencies set in to work. On one side his demand for labour goes down, and if supply remains the same, wages tend to fall. On another side when less units of labour are working than before, the marginal productivity tends to move up. And thus the gap between the price of labour and its marginal productivity gradually narrows down till the price of labour becomes equal to its marginal productivity, and equilibrium is reached. If wages are less than the marginal product, the buyer of labour will engage more and more units of it till the wages move up owing to increased supply and the marginal product diminishes and the gap that originated these tendencies is filled up and equilibrium is restored. At the point of equilibrium wages must equal the marginal productivity of labour; the employer must pay back what he receives. But the employer receives

physical product and the labourer wants payment in money, so the employer must get this physical product converted in terms of money and then pay the money amount to the labourer.

How, it might be asked here, does an employer evaluate in money terms the wages that the labourer is to be paid. The principle of evaluation is based on the recognition of the fact that if the marginal produce brings a revenue at the margin equal to X rupees in amount, then the employer, assuming that the marginal produce is one* would not pay an amount greater than X to his labourer. The wages thus are to be evaluated as the marginal productivity of the labourer multiplied by the marginal revenue. If the marginal productivity is indicated by one and X is the marginal revenue, then X multiplied by one is the evaluation of the money wages that the employer would pay to his labourer. Why should not he pay more than X ? If he pays, evidently he suffers a loss on the marginal unit. The marginal unit brings him an income of X rupees only (this is what is implied in the statement that the marginal revenue i.e. the revenue or income from the sale of the marginal unit is X). But he would be paying his labourer more than X and this surely enough goes against his interest. He would either reduce the amount of wages till it becomes equal to what the marginal unit brings him i.e. X , or dispose of some units of labour, till the marginal unit began to bring to him the amount that he is actually paying. If the wages are less than X , (i.e. less than the marginal revenue multiplied by the marginal produce) the employer would be reaping a profit. Whereas the marginal unit would be getting for him an income of X rupees, he would be paying for that unit less than this X . And so there would be a tendency to use more labour till this profit disappeared. The employer would then be paying to his labourer just the amount that the marginal unit of his produce would be bringing to him.

The difference between marginal revenue product and the value of marginal product. Why should not the employer, the question arises, pay his labourer an amount equal to the marginal produce multiplied by price? We have just seen above

*The assumption is for the sake of simplicity only.

that the labourer should be given a wage which is necessarily equal to, marginal produce \times marginal revenue, or else the employer would not be in equilibrium. If he is given marginal produce \times price, it may or may not be equal to, marginal produce \times marginal revenue; it may be greater or less than that amount. If it is greater, then he would be paying his labourer more than X which he would not do in the interest of equilibrium. If it is less, he would be paying less than X which too he would not do. If, however, marginal produce \times price, is equal to X which is, marginal produce \times marginal revenue, in our case, he would readily pay that amount to the labourer for it is an amount which he should have paid for reasons analysed above. Thus we can maintain that an employer would pay, marginal revenue \times price, as his labourer's wage just so long as this amount was equal to, marginal produce \times marginal revenue. In the case of a divergence between the two, wage will equal, marginal produce \times marginal revenue, and not, marginal produce \times price. The technical names by which these amounts go in the modern theory of wages are marginal revenue product for marginal produce \times marginal revenue and value of marginal product for marginal produce price. Wages must equal marginal revenue product in any case; they might equal value of marginal product also in some cases but only in those where value of marginal product is equal to the marginal revenue product.

So far as the demand for labour is concerned, therefore, the employer keeps an eye on the marginal productivity evaluated in money, or on marginal revenue product. His demand curve for labour would be expressed in terms of marginal productivity or marginal revenue product which is what he has necessarily to pay to the labourer if he wants to achieve equilibrium. But mere knowledge of the demand curve does not help him to determine how much labour he should employ. In the market for labour where he happens to be a buyer, labour is in supply at different rates or may be at the same rates everywhere. And his task would be to compare these rates or wages (that market conditions compel him to pay to the labourer) with the marginal productivity of labour or its marginal revenue product. Where marginal revenue product is equal to the wage rate prevail-

ing in the market, he would stop buying more labour; where it is less than the wage rate, he would use more and more labour (for there will be profit) till marginal revenue product becomes equal to the wage rate. The opposite would happen when the marginal revenue product is greater than the wage rate.

The market or the industrial wage on which the supply of labour depends and to which an individual employer adjusts his own demand must be sufficient to compensate the labourer for his sacrifices. If these sacrifices are greater than the market or industrial wage, labour supply will contract till wages are high enough to compensate the labourer's sacrifices. If the sacrifices are less than the wage, labourers in the industry will have a tendency to work more; labour supply will increase till wages become low enough to correspond to the sacrifices. Thus from the point of view of the entire industry, of which the producer whose case we have been examining so far is only a part, wage rate must be such as to equal the marginal sacrifice of labour. On the one side the wage rate of the industry is that to which the supply of labour adjusts itself and in such a manner that at the point of equilibrium the marginal sacrifice of labour equals the wage. On the other side it is the standard to which the individual producer or firm has to adjust his demand for labour in such a manner that it is equal, and neither more nor less than, the marginal productivity or marginal revenue product of the labour engaged. If the marginal sacrifice of labour is Z , the industrial wage is Y and the marginal revenue product of an employer is X , then perfect equilibrium would come only when $X=Y=Z$. If $X > Y$ but Z is greater than Y , then Z would be greater than X too i.e. the marginal sacrifice of labour would be greater than the marginal revenue product (which is given to labour as its wage) and labour supply will have a tendency to contract. If $X=Y$, but Z is less than Y , X will be greater than Z , the marginal sacrifice of labour will be smaller than its wage and labour will have a tendency to expand in supply. If $Y=Z$, but X is greater than Y , then X is greater than Z , the employer will be paying his labour more than its sacrifice and thereby feel that he is being exploited. If $Y=Z$, but X is less than Y , then X is less than Z , the marginal sacrifice of labour will be greater and the

employer thinking that he can yet exploit the labour to his advantage increase his demand for labour. And thus in all these situations equilibrium will constantly be disturbed owing to fluctuations in the supply of and the demand for labour. It is only when $X=Y=Z$, that there will be no tendency for supply or demand to fluctuate and will be complete equilibrium. The amount of labour the employers would be demanding at the rate X is what the labourers would be themselves willing to supply. For they would neither be losing nor gaining on their sacrifice in making that supply available*. Nor will the employers feel any profit or loss in such a situation. Equilibrium wage rate for an employer is thus a resultant of the supply of and the demand for labour both being adjusted to each other with the help of the industrial rate prevailing in the market.

Wage in a perfectly competitive market. It might be questioned here and rightly too whether it is necessary that there should be a single industrial wage rate prevailing in an industry at any given time. There would be a single wage rate in an industry or a market only when there is perfect competition and each employer or producer who buys labour feels powerless to influence the wage rate of the type of labour under consideration. It would not be a single wage rate if the market is ruled over by perfect or partial monopolists. Let us first see how in a market where owing to conditions of perfect competition a single wage rate exists, an employer adjusts his demand for labour to the existing wage rate for purposes of achieving equilibrium. The case of markets characterised by monopoly and hence divergent wage rates will be taken up later.

At first we suppose that there is amongst the employers perfect competition not only for the procurement of labour but also for selling off the commodity which that labour helps to produce. When perfect competition obtains in a commodity market, the price for that commodity

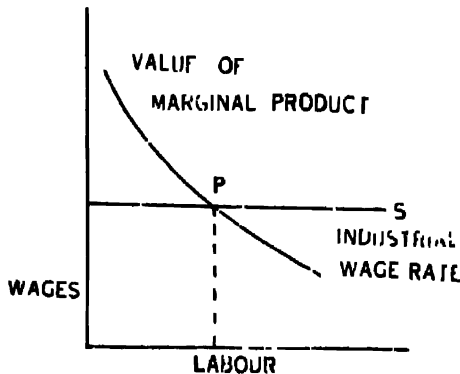
*The "sacrifice" now refers to the marginal sacrifice—the sacrifice of the marginal unit. This sacrifice will evidently be greater than the sacrifice of the earlier units. And so on such units, labour will be earning surplus or rent.

=the marginal revenue

=the producer's average cost in producing that commodity

=his marginal cost also.

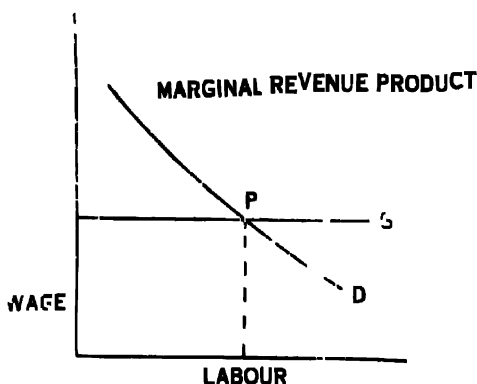
We have seen above that an employer must pay his labourer an amount which is equal to the marginal productivity of labour multiplied by the marginal revenue which the sale of the marginal unit brings to him from the commodity market, i.e. he must pay to his labourer marginal revenue product. Now in this particular case which we have chosen, price is equal to marginal revenue, and therefore, marginal revenue product becomes equal to the value of marginal product. We can therefore say that, when there is perfect competition in the commodity market, the employer of labour (who also happens to be the producer of the commodity in question) can afford to pay as wages the value of marginal product in terms of which he reckons his demand for labour too. It is the value of marginal product which he adjusts to the existing wage rate to fix up his demand.



In a perfectly competitive market of labour, an individual employer has no control over the wage rate and he has to take it as fixed for himself. In such a situation then the curve showing the wage rate must be horizontal. Since supply of labour in the industry depends upon this wage rate, the curve indicating wage will also be indicating the supply of labour. This (fixed) wage curve for labour or the supply

curve for labour cannot be rising or falling curve or else it will imply that the individual employer can cause fluctuations in the wage rates. And perfect competition does not warrant any such fluctuation from the individual employer's side. Thus the supply curve for labour will have to be a horizontal straight line. The demand curve for labour will have to be falling for then alone it can indicate the fact that when wages to be offered in terms of the value of marginal product or marginal revenue product are low, the demand for labour is high and vice versa. After the supply and demand curves for labour have been thus determined, the employer will be in equilibrium where the two curves cut each other. For it is there that the supply of labour will become equal to the demand for it. And the value of the marginal product will equal the market or industrial wage rate. At any other position, there will be a divergence between the two and hence no equilibrium.

Wages under imperfect competition. In case the employer is placed in a market where his commodity is sold under conditions of imperfect competition, the value of marginal product would become different from the marginal revenue product owing to differences in the price and the marginal



revenues accruing from the sale of the employer's commodity. In such a case, the employer's demand curve would indicate marginal revenue product in place of the value of marginal product. But the demand curve itself will continue to be falling as before. And if perfect competition is still assumed in the labour market, then the shape of the supply curve

will also remain completely unchanged. Equilibrium as before will be determined by the intersection of the demand and the supply curves.

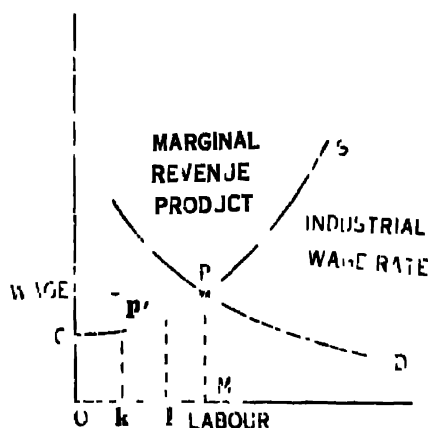
Often it happens that a producer who is a monopolist in the commodity market is a monopolist in the labour market also. The employer of labour can influence the wage rate existing in the market just as he can influence the price of his commodity. In the earlier cases we had assumed that he had no power to change the wage rates; now we come to situations in which he *can* effect changes.

Such situations can imply either of the following two possibilities: (1) The producer or employer is an absolute monopolist and all the firms constituting the industry are completely under his control so that the question of any rival or a competitor emerging against him in the buying of labour does not arise. He can then influence wages in any manner he chooses. There is no opportunity for the labourers to move on to the other employers in case of their being exploited for, the other employers simply do not exist; (2) the producer or employer has a partial control over wage rates such that when he passes a certain limit the labourers under pressure of exploitation move on to his rivals. We take up this second possibility first—the situation in which a partial monopoly exists in the labour market. In the commodity market we assume perfect competition (though generally it is imperfect competition that obtains in reality) so that the employer's demand curve for labour shows the value of marginal product.

The supply curve of labour, in the absence of a fixed uncontrollable wage rate in the market owing to imperfect competition would not be a horizontal one. It would instead be slanting and rising from the start. We cannot have a falling supply curve for such a curve would imply that larger and larger number of labourers is willing to work with every decrease in the wage. And so we are led to a supply curve for labour which is necessarily rising. The demand and supply curves having thus been obtained, the employer will come to equilibrium at the point where the two curves intersect, so that the supply of labour is equal to the demand for it.

If the commodity market is characterised by imperfect competition and the labour market continues to be imperfect as before, nothing would change in the diagram save the content of the demand curve which instead of showing the value of marginal product would show now marginal revenue product.

In the diagram showing equilibrium under imperfect competition in the labour market, PM is the wage that would be offered for OM labour supply. All units of labour from P downwards will be getting the same wage PM . It is evident from the diagram that the l th unit of labour would



have been forthcoming at a wage $p'1$ only. But since the wage now is PM instead of $p'1$, the l th unit is getting surplus equal to $(PM - p'1)$; so is labour getting surplus on the k th unit also; in fact the surplus of the k th unit is greater than that of the l th for it was willing to make itself available at a lower wage. The M th unit earns no surplus for it gets just what it was willing to accept to make itself available. All other units except the M th are earning a surplus and just so long as each unit continues to be rewarded at the same wage rate, this earning of surplus would evidently continue. The employer in our case is partial monopolist and hence his inability to stop this surplus from flowing into the hands of labour. When the employer is an absolute monopolist he sees to it that he pays to each unit of labour just what induces it to work for him.

Wages under absolute monopoly. This brings us to the first possibility indicated above that the employer in question is absolutely free to influence wage rates. The labourers will have to accept whatever wages he pays them subject, of course, to the limitation that their wages are not less than in other industries or below the minimum just sufficient to maintain the efficiency of the labourers. Beyond these limitations, of course, the monopolist will be free to exploit labourers to any extent he likes. The more perfect is his monopoly power, the more will he tend to deprive each unit of labour of the surplus that it could otherwise earn. When monopoly power is perfect, each unit of labour gets just that which is sufficient to induce it to work,—i.e. either the minimum of subsistence or the income which it might get from moving on to some other industry.

In a situation characterised, therefore, by absolute monopoly in the labour market, the same employer would be paying different wages at the same time to the different units of labour engaged in such a manner that no unit earns a surplus above its minimum for efficient subsistence or the opportunity income which it might get by moving on to some other employment. This does not imply, however, that no unit of labour would get a wage equal to the marginal revenue product. The marginal revenue product will be there, and it would set the maximum limit to which the monopolist could go. All labourers who must have more than this marginal revenue product, (for it is only a greater amount that would maintain their efficiency or prevent them from moving elsewhere) will not be coerced by the monopolist. And thus here too as in the earlier cases, the limit to the total supply of labour is set by the point where the supply is equal to the demand at a wage which is equal to the marginal revenue product. Beyond this point the supply will not be forthcoming and there will, therefore, be no equilibrium. The difference between this extreme case of absolute monopoly and the earlier cases of imperfect and perfect competition consists in this that whereas in the case of partial monopoly and perfect competition labour will get the same maximum wage equal to the marginal revenue product, in the case of absolute monopoly the marginal or the last unit will get the same maximum wage equal to the marginal revenue

product, the earlier units getting less and less amounts depending upon their respective minima of subsistence or opportunity incomes. But the maximum wage, however, must in all cases necessarily equal the marginal revenue product.

THE PROBLEM OF A JUST WAGE

We have seen now what wages can and would be offered to the labourers if equilibrium is to be reached in the labour market. All situations point to the conclusion that equilibrium wage rate would be equal either to the marginal produce of labour or to some variant of this marginal produce. But the question still remains whether or not the equilibrium wage can be regarded as a *just wage* also. This in fact is an offshoot of a wider consideration of the *just price*. In comparatively recent times however some controversy has raged round the very necessity of raising this question, a number of economists having repeatedly been pointing out that economic analysis is unconcerned with the questions of ethical import—justice, injustice and the like. But despite any such controversy it would be worthwhile not to omit this question, even if our considerations here could be only of the nature of an elementary and passing reference.

J. B. Clark has maintained that equilibrium wage equal to the marginal produce of labour—is a just wage also. For here a labourer gets just what he contributes to production. And there is no evidence of exploitation. J. B. Clark's concept of economic justice seems to be based on the receiving of an income equal to that which the recipient has helped to produce. •

And yet it is not this type of economic justice which commonly rests in the minds of men when they talk of a high standard of living, of more equitable distribution and so on. Economic justice to an average mind is a far deeper and idealistic state of affairs than is implied in the Clarkian concept. It refers, perhaps, to making payments even to those who did not produce. The fact of the payment of heavy family allowances to men with a dozen children even though their contribution to work is the same as of issueless gen-

tlemen is commonly thought as a better evidence of economic justice than the fact of no such discriminating payment. So also is thought the fact of old age pensions or compensatory payments to the soldiers who are disabled in a war. If such a concept of economic justice is taken, then Clark's statement that equilibrium wage is also a just wage might easily be questioned. For here then there can be no ground for the payment of allowance for children or compensation for a soldier's disability. Nor can there be the question of raising the standard of living of those who are getting less by paying them higher remuneration so that they may live a decent type of life. A fallen man, dull, inefficient and dishonest, who gets less for he works less and hence produces less, would not be given more and so the incentive which often comes to better living, greater efficiency and hence more production through higher remuneration would be naturally absent. Judged by the concept of economic justice as it happens to be in the popular mind equilibrium wage is not necessarily a just wage also. It would be a just wage only if it enabled labour to live the same type of efficient and decent life in society as the other classes. The concept in the mind of J. B. Clark does not involve any such condition. To him so long as labour, or for the matter of that, any other factor of production gets the remuneration equal to its own contribution to production economic justice is done, its remuneration is a just remuneration. At the position of equilibrium, he says such a situation exists; labour gets back in wages what it had helped to produce.

It may be worthwhile considering here what precisely is meant by the productivity of a factor. We maintain that the factor labour is paid a wage that equals its marginal productivity. And we determine marginal productivity by decreasing labour by one unit and measuring the loss of produce caused by it. And since the withdrawal from work of any other one unit of labour of equal efficiency would also cause the same reduction in output, we maintain that the wage rate must equal the marginal productivity thus calculated. Now, it must be noted that this amount is not an independent and specific contribution of labour to production. No individual by his own effort, unaided by other factors of production, can produce anything. Even the addition

made to produce by the employment of the last labourer is the joint production of all the factors. If you add one more labourer to the total number engaged in producing a commodity he gets the co-operation of the other factors and the increase in the produce that we ascribe or impute to this labourer is, in fact, the result of the combined work of all factors. A part of the extra produce is thus due to the effort of other factors. Yet, in one sense, the marginal produce can be regarded as the contribution of the marginal labourer. For, if he is not solely the producer of this additional output he is certainly and undoubtedly solely responsible for this addition. Rather his presence is the sole cause of this marginal increase in the produce obtained. It is his presence that makes the other factors offer their cooperation. And it is only in this sense, that we can maintain that the marginal productivity of a factor *can be* determined and its remuneration accordingly adjusted.

Now, then, if the labourers get what they, in some sense, produce can it be maintained that they get a fair wage?

Yes, perhaps, in one sense we can. Equilibrium wage is necessarily an ideal thing at least under the conditions or assumptions for which it has been worked out. And since any ideal thing would be a right thing also, equilibrium wage is a right payment. And since any right payment is in some sense at least a just payment also, equilibrium wage is a just wage also. And so we may state that at the point of equilibrium when labour is paid marginal produce or some variant of it, it gets a remuneration that cannot be categorically called unjust. But beyond this analysis what would happen we may not easily be able to consider unless we choose surpassing the limits within which this book is to lie.

CHAPTER XLII

RENT

Rent may best be described as that part of the produce that goes to the owner of land. We have already seen that a number of factors have to work together in order to produce a commodity or perform a service. Each of these factors therefore claims a part of the value produced. The part that the owner of land claims for himself is known as rent.

Here we are faced with two difficulties. In the first place, we have to define the term land and, in the second, we have to see in what sense, if any, land so defined can be regarded as a factor of production. The first of these two difficulties must claim our prior attention.

The word land, as so many other words we use in economics, has been borrowed from common parlance. To the man in the street it connotes the idea of earth or soil. But economists ever since the time of Ricardo have used this term to include all natural agents that help man in the production of wealth. Thus the word land signifies to an economist soil, water, sunshine, heat etc. Ricardo defined rent as the payment for the permanent and indestructible powers of the soil. It is obvious from this that for him land in its true sense consisted of permanent and indestructible powers of the soil. And since the properties of the soil are dependent on heat, sunshine, water, etc., we can let his definition of land include all these natural agents also.

Marshall and other economists who followed him have also understood by the term land all the natural agents that help us in the production of wealth. Land has therefore often been called the free gift of Nature. This description of land brings out the contrast between land and capital. Both help us in production : but while capital is a man-made agent, land is a natural agent. All man-made things are destructible and so capital is destructible. Land is therefore not destructible. It is an original, permanent and indestructible agent.

Rent is that part of the total produce that is claimed by the person who supplies such an original and indestructible agent. Now, it was realised even by the classical economists that perhaps there is no piece of land that is, in the strict sense of the word, original and that there is no plot of land whose fertility is quite indestructible. Man always alters the physical and chemical properties of soil before and during its use. The soil he uses is therefore not entirely original. Nor, for that reason, is the fertility of the soil absolutely indestructible. Ricardo and others therefore said that not all that goes to the owner of land should be called rent. A part of it must be regarded as interest. It is that part which he can regard as the remuneration for the capital invested by him in land in order to make it more suitable for use. In other words, the classical economists would say that the so-called plot of land is not entirely land. Only that part of it which is original and indestructible, should be reckoned as land. It is of course difficult to point out what part of a stretch of land is land in the true economic sense. All that can be said is that it is partly land and partly not. If the owner regards 20 per cent of what he gets as his share of the produce, as interest on his capital, then one can say that the plot of land is land in the economic sense to the extent of 80 per cent only.

Rent is then what goes to natural, original or indestructible agent. Now if rent is thus a part of the produce that is appropriated by the owner of such original agent, it is clear that it cannot be regarded as a remuneration for a sacrifice on the part of the owner. What is original and is not in any sense made by you does not involve any sacrifice. If you have to sacrifice some time and energy to appropriate a plot of land, then a part of what you get will be called wage and the rest will be rent. What is then truly rent is not in the nature of a remuneration for sacrifices made.

Here we are face to face with the second difficulty referred to above. If rent is obtained from the use of what is a free gift of nature; if the landowner has to make no sacrifices in supplying such a gift for productive uses, can land be regarded as a factor of production or the landowner an agent of production? It cannot be disputed of course that a plot of land plays an important part in production. Without it no

procudtion is at all possible. But look at the problem from the point of view of its owner. Is he a factor of production? Is he in the right sense of the word, engaged in a productive activity? What is production? It is an indirect act of satisfying a want. It does not yield satisfaction directly. It is, immediately, an irksome exertion. It is, in other words, an act involving some sacrifice for the sake of future gain. If production then necessarily involves sacrifice can the owner of land who sacrifices nothing, justly be regarded as an agent of production? A plot of land may be called a factor of production in the sense that it is one of the *things* that we need for purposes of production. But the owner of land is certainly not an *agent* of production. It is precisely for this reason that the income of the owner of land is regarded as a surplus. The word surplus conveys the idea of some thing that is over and above one's cost. It does not therefore remunerate one for one's sacrifices; and that is because there is no sacrifice that the owner of land has to make.

We have already observed that most, perhaps all, pieces of so-called land are not entirely free-gifts of nature. If a plot of land is then only partly a free-gift and therefore only partly land, what are we to call it? Shall we call it land or capital or a combination of both? Perhaps the last description would appear to be the best. But then, what is a tool, a machine, or a brick? Is not a brick also partly a free gift and partly not? Is it not as much a product of human effort applied to some Nature's gift as any piece of so-called land? If then we call a plot of land, a combination of land and capital, we shall have to so call every material thing that we use in any act of production. But it has never been suggested that a machine should be called a combination of land and capital. Let us therefore agree to call the so-called piece of land capital and only remember that it has a land aspect. That is, let us say that every material thing used in production is capital with an element of land as its free-gift aspect.

If we accept this view, a stretch of earth, the so-called land, becomes capital. Land as an independent factor ceases to exist. And in so far as there is no land as an independent factor, there is also no *factor* of production called land. This view would justify the statement that land is not a factor of production.

We have so far stuck to the classical definition of land and studied the full implications of the phrase *free gift of nature*, or of Ricardo's description of land as original, permanent and indestructible powers of the soil. The classical economists did not say in so many words that a plot of land is capital with a land aspect in it. But their meaning of the word land and their explanation of it clearly suggested such a view.

The modern economists therefore make really no distinctive contribution of their own to the meaning of the word land when they say that every material object used in production is land to the extent to which it is specific to one particular use. Let us therefore study in some detail the modern explanation of the word land.

Modern Definition of Rent

Some modern economists prefer to distinguish land from capital on the basis of its specificity. They say that an object can either be put to one specific use or to more than one. When it is capable of being put to more uses than one it is capital; and when it can be put to only one use it is land. Ignoring for the time being the fact that there is no object that cannot be put to several uses let us see what such a distinction implies. Economic behaviour consists in the exercise of choice. In the case of any particular object that can be used for productive purposes, the exercise of choice consists in determining what amount of it shall be used for one purpose and what amount for other alternative purposes. Thus, when an object is capable of being put to several uses it allows us scope for the exercise of our choice. Capital thus becomes an object of economic behaviour. Land, on the other hand, being defined as an object that can be put only to one use, offers us no such scope for the exercise of choice. It does not, therefore, become in the right sense of the word, an object of economic behaviour.

What is then the difference between capital and land? Capital figures in a behaviour that can be called economic; land does not. And since economic behaviour is concerned with minimisation of cost, it follows that in the case of capital

the calculation of cost (and its consequent minimisation) is possible. In the case of land, on the other hand, no calculation of cost or its minimisation is possible. Whatever one gets out of land is therefore just a gift—an income without cost. A specific good is therefore one that yields income without cost. This brings the new definition of land into conformity with the classical conception of land. The modern economists say that land is a specific factor; income from it is obtained without cost. The classical economists said that land is a free gift of Nature. The two ways of defining the word land therefore point to the same fact, namely, that *land is a free gift*. It is not man-made. Income from it is obtained without cost. It is a pure surplus.

Let us now understand the word rent as a surplus. We know that Ricardo explained rent as a surplus over cost, the cost being equal to the value of the produce raised on the marginal land. In a country that is sparsely populated, he says, the most fertile land is first cultivated and the produce raised is consumed by the people. Since land of this quality is available in plenty there is no need of cultivating inferior qualities of land. There is no rent. As the population grows, it is found that the produce raised is insufficient to meet the demand at the prevailing price. The price of produce rises and consequently it yields a surplus over cost. This surplus is appropriated by the owner of land. But as the price rises it becomes profitable to cultivate land of a slightly inferior quality. For, this second grade of land can now, by selling its produce at the higher price, recover its cost of production. Since it is just able to cover the cost it bears no rent. If, however, the population was to increase further the price would rise again and this second grade of land would begin to earn rent. Land of a slightly lower fertility would, at this stage, begin to be brought under the plough. At every stage of the population growth there would thus be all grades of land but one earning rent. The land at the margin, called the marginal land, would be the only land going without rent.

What follows from this is that the value of the produce raised on the marginal land just equals the cost of raising it. There is therefore no surplus of income over 'cost and con-

sequently no rent. All other grades of land that produce more are able to earn a surplus above their cost. The surplus in each case is appropriated by the owner of land as rent. We can say therefore that rent is the surplus of income over cost. If we have to express rent *in kind*, we would say that the rent in kind of a plot of land is the difference between the produce raised on it and the produce that is raised on the marginal land of the same size cultivated in the same way.

Let us see now whether according to the modern definition of rent it can be understood as a surplus of income over cost.

We have already said that according to the new definition land is a specific factor. It is an object that can be put to only one use. Now, if a thing can be put only to one use it means that when it actually is put to that use, we have not to forego any other use of it. And if we have not to forego any other use, it follows that we have to sacrifice nothing in using the thing in the only one way in which it can be used. And since there is no sacrifice there is no cost. We say that when we purchase a book for five rupees the procurement of the book costs us five rupees. In other words, putting our five rupees to this particular use of purchasing a book with it, costs us as much (utility) as five rupees. If now there was no other use that the five rupees could be put to, that is, if you could not purchase with them any other thing, would you say that it costs you five rupees, or utility worth five rupees, to get the book? One could say so if one liked, but it should be clear that if one could purchase nothing besides the book the five rupees would be otherwise useless and one would not consider it costing one anything to purchase the book.

We see therefore that there is in reality no cost involved in using a thing that can be used in only one way. And if there is no cost the entire income becomes rent. For, the entire income becomes a surplus over cost. And if a thing is not entirely specific, that is, if it cannot be put to only one use, but to two uses, in one of which it can produce much more than in the other, then, we can say that it is in a great measure specific to the use in which it is able to produce more. Thus, for instance, if a thing produces Rs. 100 when put to one use

and only Rs. 10 when put to the other use, we would say that it is specific to the first use to the extent of 90%. And in such a case rent would be equal to Rs. 90, that is, Rs. 100 minus Rs. 10. And since in this case one has to forego the income of Rs. 10 in order to be able to get Rs. 100 one can say that Rs. 10 is the cost of earning Rs. 100. Rs. 90 thus is the surplus of income over cost. Rent then, according to our new definition, is also a kind of surplus. It is surplus over what may be called the *opportunity cost*. Thus, even when rent is viewed as a surplus over cost we find the classical and the new definition yielding the same result.

FERTILITY AND SITUATION RENT

We shall now pass on to some more practical considerations. We have seen how the so-called land is really capital and how the income from it is therefore interest with only an element that may be called rent. We shall now, at least for the time being, abandon this theoretically correct view and understand by land soil or earth that is put to any productive use. It is necessary for us to do that in order to be able to discuss some practical problems in familiar terms. Hence in what follows we shall mean by land the so-called land and by rent the income that the owner of it gets after deducting from it interest on capital that he may have invested on the land or wages for any work that he may have done during its productive use.

Ricardo explained how the marginal land pays no rent and how the other plots of land pay rent according to their fertility. The land that is most fertile pays the highest rent and the one that is slightly less fertile pays a slightly lower rent, and so on. That is so because the more fertile plot produces a greater surplus over the produce of the marginal land than a less fertile one. Now what is true of fertility is also true of situation. A better situated land pays higher rent than another that is not so well situated, even though they may be equally fertile. That is so because the land that is more favourably situated is more productive of *value*. The land that is poorly situated is either far off from the market place or else has more costly approach to it. The result is that in order to sell the produce a greater cost of transport has

to be incurred. Suppose that there are two plots of land of equal fertility. When cultivated in the same way they yield a surplus of Rs. 100/- each. One of these is closer to the market for grains than the other. Let us suppose that the cost of transporting and selling the produce of the first plot of land is Rs. 10/- while that of the second plot is Rs. 30/-. Then, the first plot of land will earn a rent of Rs. 90/- while the second plot will earn a rent of Rs. 70/- only. In this way the land that is situated far off from the market and has to incur the cost of Rs. 100/- to transport and sell its produce will not earn any rent. It becomes the marginal land, not one having marginal fertility, but one being on the margin of situation, as it were.

When, rent is measured in terms of money we cannot therefore say that the more fertile land always pays more rent. But if we measure rent in terms of produce then equally fertile lands pay equal rents on the spot. The land that is far off from the market for the produce will receive the same rent in kind but its money value would be less. When rent is measured in kind we define it as the difference between the produce of the land under question and the produce of the marginal land. Here marginal land means the land the value of whose produce is just equal to the cost of raising that produce. Suppose that the land under question produces 100 maunds of wheat. To calculate its rent we have to compare its produce with that of the marginal land. If we compare its produce with that of an equally fertile land that is so badly situated that it is able to pay no rent at all, we would get the figure zero for rent. If however we were to compare its produce with that of a less fertile land but equally well situated we would get some finite figure for rent. Hence, when defining rent in kind as above, we have either to understand by the word marginal land the land that is on the margin of fertility or else to understand by produce not the produce on the spot but the produce in the market place. The figures for lands of different degrees of fertility and situated at different distances from the market are given below.

| Plot A | Plot B | Plot C | Plot D | Plot E |
|------------------------------------|------------------------------------|------------------------------------|------------------------------------|-------------------------------------|
| Produce 100 mds. | Produce 80 mds. | Produce 100 mds. | Produce 60 mds. | Produce 80 mds. |
| Cost of transport to Market Rs. 10 | Cost of transport to Market Rs. 10 | Cost of transport to Market Rs. 50 | Cost of transport to Market Rs. 10 | Cost of transport to Market Rs. 30. |
| Cost of cultivation Rs. 50 | Cost of cultivation Rs. 50 | Cost of cultivation Rs. 50 | Cost of cultivation Rs. 50 | Cost of cultivation Rs. 50. |
| Price per-mauud in Market Re. 1. | Same | Same | Same | Same |
| Rent in maunds Rs. 10 | Rs. 20 | Nil | Nil | Nil |
| Rent in maunds 40 maunds | 20 maunds | Nil | Nil | Nil |

Here plots *C*, *D*, and *E* are marginal land and pay no rent. Plots *A*, *B*, and *D* are equidistant from the market; they have the same situation. The situation of plot *C* is the worst. Plot *D* is on the margin of fertility; the plot *C* is on the margin of situation, while the plot *E* is on a combined margin. It can be calculated from the table that the net value produced by the five plots are Rs. 90, Rs. 70, Rs. 50, Rs. 50, and Rs. 50 respectively. Since the cost of production is Rs. 50, the plots *A* and *B*, earn the rent of Rs. 10 and Rs. 20 respectively.

If we define rent as the difference between the produce of a land and that of the marginal land, the rent of plot *A* would come to be nil when the marginal land *C* is taken into account and 40 maunds and 20 maunds when the plots *D* and *E* are considered as marginal land. This difficulty can be got over, as we have already observed, when we understand by produce the produce in the market, that is after meeting the cost of transportation. Thus, when so understood, the products

of the plots *B, C, D*, and *E* becomes 70, 50, 50 and 50 maunds respectively. And the last three plots being marginal ones the rent of plot *A* becomes 40 maunds with respect to any of them.

It is best and least confusing to define and calculate rent in terms of money. In terms of money the rent of plot *A* is Rs. 40/- unequivocally. In terms of produce it is 40 maunds only when it is paid in the market. If the rent has to be paid on the spot it would be 50 maunds. The ten extra maunds would cover the cost of transporting wheat to the market for sale. Such a difference between the rent in the market place and the rent on the spot does not arise when rent is paid in money. For, money has no cost of transportation.

IS RENT DUE TO SCARCITY OR FERTILITY ?

We have just seen that the land that is more fertile fetches more rent. The least fertile land under cultivation out of those that have equal access to the market, pays no rent. Rent, it can therefore be maintained, is due to the fertility of land. But while rent is earned because land is fertile, it is also true that if all plots of land had the same fertility there would be no rent. Ricardo's explanation of rent makes this point abundantly clear. He has shown how the best quality of land begins to earn rent only when the population increases sufficiently to make the produce scarce, raise the price and make it profitable and necessary to cultivate land of the next quality. It is only when the best grade of land becomes, in other words, scarce that it begins to earn rent. This way of looking at the cause of rent is quite in conformity with the general theory of value. Nothing can fetch a price that is not scarce. Unless water is scarce it cannot have value. Same is the case with land. If rent is the price paid for the use of land, it can arise only when land is scarce.

What then is the correct explanation of rent? Is it more correct to say that rent is due to fertility or that it is due to scarcity of land? Both the statements are, in a way, equally correct. However, it may be noted that the former of

the two statements must be made with caution. For, even the marginal land has some fertility though it may not fetch any rent for its owner. It is therefore better to say that rent is due to the difference between the fertility of a piece of land and that of the marginal land. Marshall while considering this question asks whether rent is differential earning or scarcity earning, and says, "In a sense all rents are scarcity rents, and all rents are differential rents. But in some cases it is convenient to estimate the rent of a particular agent by comparing its yield to that of an inferior (perhaps a marginal) agent, when similarly worked with appropriate appliances. And in other cases it is best to go straight to the fundamental relations of demand to the scarcity or abundance of the means for the production of those commodities for making which the agent is serviceable."

It may be noted here that the difference between the differential aspect and the scarcity aspect of rent is a superficial one. For, no unit of an agent can be scarce, in the sense in which the word is used here, unless it is more productive than other units. Likewise, no agent can be more productive than another unless it is scarce. Consider, for example, the case of agricultural land. If all the land in a country were of the same fertility there would be no rent. For, there would be no marginal land in that case. We can either say that there is no rent because there is no difference in the fertility of the various plots of land, or that there is no rent because land is not scarce. It may be, however, that even when all the land in the country is equally fertile it is not able to produce all the food that the population needs until it is intensively cultivated. In that case land would become scarce no doubt and rent would have to be paid for its use. It might therefore seem that scarcity may account for rent even though there may be no differences in the fertility of land. But here we should note what the Ricardians said. There is of course no difference between the fertility of one plot of land and that of another. But there is difference between the productivity of one dose of resources applied to land and another. The last dose of "labour and capital" produces just enough to cover the cost. There is rent element in the productivity of the marginal dose. There are differences in the productivity of different doses; we may, if we like,

call these differences, differences in the fertility of various doses. Thus, there must be fertility-differences otherwise land would not become scarce. Were all the doses of labour and capital, applied to a piece of land, to give the same return, it would never become necessary to cultivate all the land in a country. Land would not become scarce then. Hence, we can say, no differences in fertility, no scarcity: and no scarcity, no differences in fertility. To say therefore that rent is differential-rent is to say that it is scarcity-rent, and vice versa.

THE RELATION BETWEEN RENT AND PRICE

It was once a mooted question whether rent was determined by price or price was determined by rent. The Ricardians maintained, and rightly too, that it was price that determined rent. Rent "is paid because corn is high and not vice versa." There are various ways of showing that the cause of rent is price. The classical manner of showing it is as follows. The price of corn is determined by the cost of production of the marginal land. The marginal land pays no rent. Therefore the price of corn is determined independently of rent. This is perhaps the simplest way of proving that price is not determined by rent: it determines rent.

This explanation of the point is however open to attack. What happens to the argument when there is no marginal land? If even the marginal land pays rent we cannot say that price is determined independently of rent. The Ricardians, however, answered by saying that if there is no marginal land there must be marginal dose (of labour and capital) applied to land. The cost of the marginal dose is just covered by the marginal produce (return). The price of corn is therefore determined by the relationship between the marginal produce and the marginal cost. There is however no-rent element in the marginal produce (since it must cover the cost). Hence, we can say as before that price is determined independently of rent.

Another way of proving the same relationship is as follows. Rent is, by definition, the difference between income and cost. Income is determined by price. Rent is therefore

the difference between the price realised and cost. It is the surplus of price over cost. Both price and cost must therefore logically precede rent. Rent results from the excess of price over cost. Unless price is first determined and the cost known one cannot say what the rent would be.

If we look upon rent as the price of (the use of) land the relationship between rent and price will show itself very clearly. We pay a price for the use of land because it is productive. It is productive in the sense that we can sell and get a price for what it produces. Because the produce of land fetches a price we are willing to pay for the use of that land. Hence, the price of land is due to the price of its produce. If the price of produce goes up the price of land also goes up. Rent is therefore due to the price of the produce of land and not vice versa.

All this is simple enough to understand. Price is determined by rent. Rent is no part of cost. It is a surplus above cost. But, it is sometimes asked, does not the rent that an individual producer pays to the landlord enter into his cost of production? And does not the price that he charges for his goods cover rent along with other items of cost? Does he not see to it that he gets a price that is high enough to cover his cost that includes rent? If rent does not determine price, would it not be equally correct to say that wages also do not determine price, and likewise, interest and other payments also do not determine price? Is not the price of a commodity high because wages, interest, etc. are high? And if that is correct, is it not equally correct that the price is high because rent is high? Now, if what we have argued before about rent and price is correct, this must be wrong. Both the arguments cannot be correct at the same time. Can we however in any way reconcile the two apparently opposite views?

Some economists have said that while, from the general social point of view, rent is determined by price (and does not itself determine price) from an individual's point of view price is determined by rent. It means, in other words, that the rent that an individual pays enters into his cost but the rent that accrues to society does not enter into social cost. For the society as a whole rent is a surplus. For an individual it is not a surplus; it is a part of cost.

This distinction between rent from social point of view and rent from an individual's point of view is essentially correct and harmonises with a similar distinction in regard to land. It is said, for instance, that while land is a free gift of Nature for a community, it is not a free gift for any individual owner. Every individual holder of land today has had to make some sacrifice in order to acquire it. But Nature has given land free to society. If we go back to the times when man first settled on land we find that even individuals got land as a gift from Nature. They had then to make practically no sacrifice to acquire land for productive use.

This view of land is for all practical purposes correct. From the purely theoretical point of view, however, the distinction just made is not valid. Even to a society land is not entirely a free gift. Some sacrifice even the original settlers on land had to make before they could use the otherwise free gift of Nature for the satisfaction of their wants. But the degree of effort required to appropriate, and then to use, land for productive purposes is very small indeed. An individual today has to make great sacrifices to acquire land. He has to purchase land from another individual or group of individuals. But his sacrifice is another party's gain. The society as a whole is not, in the objective sense, any the worse off for such a transaction. That is why we maintain ordinarily that even to-day land is a free gift to society though not to individuals.

Reverting back to the question whether rent is determined by price or price is determined by rent, let us make a brief comment on the view stated above. From the social point of view, it was said, price determines rent, while from the individual's point of view rent determines price. It is of course true that the payment that an individual makes to the land-owner for the use of his land is his cost. But this cost is some-body's gain. For the owner of land who gets it as his income it is not cost. It is a pure surplus: a rent. It is natural therefore that what is a surplus cannot be a cost element—i.e., a part of cost—and consequently cannot go to determine price. But since, for an individual

it is a cost item it must, along with other cost items, help to determine the price. There can be no objection to this view, but it is pertinent to ask whether a cost item can be called rent. Is it logically correct to say that what one pays to another is one's surplus and therefore one's rent? Is it not misusing the term rent when we say that an individual *pays* rent? The real position is as follows. All that a man has to sacrifice in order to produce a commodity constitutes his cost. Since cost must be equal to price in equilibrium, it can be said that each of these sacrifices plays its part in determining price. But what are these sacrifices? One sacrifice consists of the payment that he makes to the owner of land. What should we call this sacrifice? Not rent, certainly. For, rent is by definition a surplus (*above cost*). It is not rent from the point of view of the man who pays it. It is rent from the point of view of the man who receives it. To call it rent is to look at it from the point of view of the recipient. We cannot, therefore, say that rent determines price from the individual's point of view. For, from the individual's point of view it is *not* rent. From the point of view of the individual who receives it, it certainly is rent. But it is then not a cost item to him and the argument that since rent is a part of cost it must be held to determine price becomes inapplicable.

EXTENSION OF THE CONCEPT OF RENT

If rent is a surplus, cannot all surpluses be called rent? We have already seen how all free gifts of Nature can be called land whether they are in the form of soil, water or sunshine. Further extending the meaning of the phrase *free gift of Nature*, we can include in land even human factors of production. It is a commonplace in modern economic theory to include man, or to be more correct, a certain aspect of man as a productive agent, in land. But even Marshall clearly had such a thing in mind. For, he speaks of rent of ability; and there can be no rent of ability unless ability is regarded as a kind of land. It can be concluded, therefore, that wherever there is a surplus it can be regarded as rent. Marshall speaks of two kinds of rent besides the rent of land. First, he mentions the rent of ability, just referred to above, and, second, quasi-rent. Even Consumer's surplus Marshall

formerly called consumer's rent. Let us see first what rent of ability is.

RENT OF ABILITY

The earning of a producer depends, along with other things, on his efficiency. And his efficiency is partly a result of the investment of human effort in him as an agent of production. Explaining the various factors on which a man's income depends, Marshall says, 'there is some interest in the inquiry how much of the income of successful men is due to chance, to opportunity, to the conjuncture, how much to the good start that they have had in life; how much is profit on the capital invested in their special training, how much is the reward of exceptionally hard work, and how much remains as a producer's surplus or rent resulting from the possession of rare natural gifts.' The income of most men in ordinary circumstances contains a very small element of rent of ability. But cases are innumerable in which a substantial part of a man's earnings consists of rent of rare ability. Only that part of one's income is called rent which is due to natural ability. For, to be true to the meaning of the word rent, ability that is acquired by training is not *rent*, it is not a free gift of Nature. Thus, Marshall says that the income which a man derives from the use of his rare and natural ability may be called his rent of ability. The word ability is qualified by two adjectives, rare and natural. If the ability is not rare, that is, if it is not scarce, it cannot have a price. We have already seen that in order that land may earn rent it must be scarce. In fact, nothing that is not scarce can have an exchange value. Rent of ability is therefore rent of rare and natural ability. However, the word rare is not so important here. For, there is hardly anything in this world that is not rare. Certainly, ability of every kind is rare. What is more important for our purpose is the word natural. Ability may be inborn or it may be acquired. The former is of the nature of land; the latter of the nature of capital. The return to acquired ability is of the nature of interest or of that of wages. It is only the income from the use of natural or inborn ability that is rent.

IMPORTANCE OF THE CONCEPT OF RENT OF ABILITY

The concept of rent of ability is important in so far as it draws our attention to the fact that there is land element in man also. It makes us realise that surplus income does not accrue only to the so-called landlords. Landlords are not the only people who can be said to earn a taxable surplus. There was a school of physiocrats who believed that agriculture was the only productive enterprise. They believed that because they thought that land was the only agent that earned a pure surplus. They therefore advocated a single tax on land. They were correct in so far as they maintained that unless there is a surplus income there is really no production. Production is creation of utility. Unless there is an addition to the stock of utility there is no production. An enterprise is therefore productive only if it results in surplus income. And since a tax can be paid only out of one's surplus, it is essentially correct that much shifting of taxes would be avoided if land only was taxed. Their mistake however lay in thinking that land, that is, soil (for that is what land meant to most of them) was the only thing that produced a surplus. The concept of rent of ability draws our attention to the fact that such a surplus can also be earned by man. A businessman, a labourer and an enterpriser can also earn a surplus. Their work also is therefore, productive. They also earn rent. Taxes can be levied on and paid by these agents of production.

Another importance of this concept consists in the fact that it enables us to understand why in spite of high earnings of some people in an industry (that is, any kind of productive work) sufficient volume of resources may not flow into it. Ordinarily we would expect resources to flow into the industry where earnings are high. If, by chance, there happen to be a number of people with rare *natural* ability earning high incomes in an industry, resources would not necessarily flow into it. For, the return to investment in the industry is not abnormally high. What makes the earnings high is the rent of ability. The concept of rent ability further enables us to understand the reason for the great disparity in the income of one man and that of another in the same occupation.

RENT IN RELATION TO TIME —THE CONCEPT OF QUASI-RENT

We have already seen how every surplus of income over cost can be called rent. What is surplus for one, we have seen above, is cost for another. That is not difficult to understand or visualise. All that we have to note is that the term surplus is a relative one. It is related to person and time. It is its relation to time that we are going to consider now.

A person's income may at times be in excess of his cost. That is, his income per unit of time may be greater than his cost. Suppose a man is spending Rs. 100 per month on the production of a commodity and earning Rs. 120 per month. We would say then that he earns a rent of Rs. 20 per month. If during any particular month he happens to earn Rs. 130/-, his cost remaining the same, his rent rises to Rs. 30/- during that month. We cannot say that his rent is Rs 30/-. That statement would be meaningless. Unless we know during what length of time that rent is earned and also during which specific period of time, the statement has no meaning for us. Now, when it is known that a man has earned a rent of such and such an amount during such and such a period of time, it cannot be concluded that he must have earned the same rent in the past during a similar period or that he would be earning the same amount of rent in periods or similar duration in the future. Such a conclusion is possible only in the case of a hypothetical static state where equilibrium has once been reached. In the real world where conditions do not conform to the model of a hypothetical static state, the present is no indication of the future or of the past. One may get a surplus of income over cost one month while in the next one may have a deficit. Or the amount earned as rent may fluctuate.

However, more mobile the resources and more perfect the competition, the smaller are the fluctuations in rent. That is, when the surplus increases and there are any chances of its continuing at that higher level, resources tend to flow into that industry. The increase of resources invested into that particular line of production, by reducing temporary scarcity, brings down income and with it the rent. Thus rent tends to be stable. Rent cannot be stable however over

very long periods of time; but the mobility of resources do reduce fluctuations over short periods of time.

Suppose due to a temporary scarcity of a certain type of machine the entrepreneurs using it earn an excess income. They earn high rents. In course of time more machines would certainly be produced and the surplus of income over cost would be reduced. But so long as the scarcity of the machine continues in greater or less degree, the entrepreneurs would go on earning abnormal rents. This surplus of income, which we can call rent is a temporary phenomenon. Marshall calls it *quasi-rent*. It is rent because it is a surplus it is *quasi-rent* because it is temporary—it is due to capital having temporarily acquired the characteristics of land. Land, we have seen, is a gift of Nature. Its quantity is therefore beyond human control. We cannot increase the supply of land. In the case cited above capital was scarce. Its supply was limited and fixed, and human effort could not increase it at once. For the time being, therefore, capital assumed the aspect of land.

We can therefore say that any excess of income over cost that is due to temporary limitation of the supply of an agent of production may be called quasi-rent.

Quasi-rent here described is due to the difficulty of adjusting supply to demand. When any change in demand takes place suitable adjustments have to be made in supply. Such adjustments take time. Quasi-rent may be earned in the mean time.

We may now consider rent in relation to time from a slightly different point of view. The cost of production of a commodity is composed of fixed and variable items. In Economics these two categories are known as supplementary and prime costs. The former does not change every time the output changes. But prime cost of production changes with the output—it increases and decreases with it and is consequently zero when production is discontinued for a while. It follows therefore that so long as the price of a commodity covers the prime cost of production the producer incurs no loss on the amount currently produced. For, the additional

cost that he incurs on the production of a given amount of the commodity is by definition prime cost. And so long as this additional cost is covered by the price, he loses nothing by producing that amount. While then the price of a commodity may cover the prime cost or more than cover it and thus yield a surplus, it may not cover the supplementary cost. During any particular month a producer may thus find that his income is in excess of his cost. There may therefore be a surplus of the nature of rent. But if we take a period long enough to include the time when initial expenditure was made on the purchase of machines and the erection of the factory buildings, the income earned during the period may not be in excess of the cost. The temporary surpluses thus go to cover the supplementary costs. It may be that in the long run the surpluses temporarily earned more than cover the aggregate cost of production. But, it is clear, the entire amount earned as surplus during the short-period is not of the nature of rent from the long-period point of view. Here then we have a surplus of another kind. Marshall calls this surplus also quasi-rent. It is rent, again, because it is a surplus. It is called quasi-rent because it is temporary surplus from the short-period point of view. Here there is no scarcity of capital as before that accounts for the emergence of a surplus. But there is the temporary fixity of those items the expenditure on which constitutes supplementary cost. Building and fixed plants are not increased every day or every month. No fresh and current expenditure has therefore to be incurred on them. These forms of fixed capital continue to be fixed for some time. Monthly income therefore shows a surplus over monthly cost of production. The surplus, called quasi-rent, is therefore again due to capital having acquired temporarily the characteristics of land. The only difference it is that whereas in the previous case the fixity of capital was due to the fact that adjustments take time, in the present case it is due to the fact that adjustments do not need to be made every time.

IMPORTANCE OF THE CONCEPT OF QUASI-RENT

The economic status of a man is usually judged by the net income he earns. Since rent is net-income less cost, it is

taken to be an indication of a person's economic condition. For purposes of taxation his rent is taken to be the index of his taxable capacity. In judging whether a person is earning sufficient amount of income or whether he is earning more than another person the excess of his income over cost, that is, his rent is taken into consideration.

Since rent is a surplus it is certainly a fair indication of a person's economic condition. But we should be careful that we do not confuse quasi-rent with rent proper. We have just seen how quasi-rent is a short-period phenomenon and does not represent the true surplus from the long period point of view. Were we to base our calculations on the amount of quasi-rent earned by a man we would be grossly exaggerating his economic status. A substantial part of quasi-rent consists in most cases of costs incurred in the past. A doctor's, a lawyer's or a teacher's monthly income is often in excess of his monthly expenditure. All this difference is however not a true surplus. It is quasi-rent, not rent. We have to debit to this surplus that he earns every month, interest on the investment that he has made in himself. We have, in other words, to deduct from the monthly surplus the monthly interest on the sum he has spent on his training. We have further to charge to this surplus the monthly depreciation on this capital.

Income or the excess of income over cost often appears greater than what it is in the case of great men. Poor people's surplus of income over expenditure is however a better indication of their economic condition. For, in their case there is very little investment of capital and consequently a very small amount that need be deducted from the monthly surplus in order to calculate pure rent.

1 EFFECTS OF IMPROVEMENTS ON RENT

It is interesting to consider what effect improvements in the art of agriculture that raise the produce of land would have on the rent of land. At first thought it would seem that every improvement of land that had the effect of increasing its productive powers must naturally increase rent. For, rent being the price (in the ordinary sense) paid for the use

of land, must increase as its productivity increases. Other things being the same, a machine that produces more can be sold for a higher price than another that produces less. And if the marginal productivity of all the machines were to increase the absolute share of the machines would also increase, provided, of course, there was no change in the number of machines used. And what is true of machines, it might be thought, would be true also of land. This however is not correct.

Ricardo showed long ago that an improvement in the art of agriculture that raised the productivity of all the qualities of land by equal amount would decrease the rent of land. He assumed first, that the productivity of all grades of land increased by the same *amount*, and second, that the amount of total produce raised was constant. If the improvement was such as to increase chiefly the productivity of richer lands, he said, the rent might increase, while it would decrease if the improvements affected mainly the poorer lands.

Let us study these cases with the help of diagrams. There are four figures showing four different ways in which the productivity is affected by the improvement of land. The curve *AB* shows the diminishing productivity of land as we pass on to poorer and poorer grades. The curve *CD* shows the productivity after improvements have been made on land. In order to simplify diagrammatical treatment let us treat the entire land area in the country as one plot of land. The curves *AB* and *CD* would then show the diminishing marginal productivity of land as more and more doses of labour and capital are applied. When less doses are applied naturally some part of the total area would be left uncultivated.

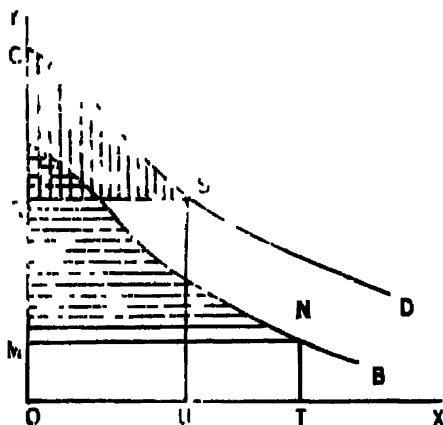


Fig. 1

OT represents the number of doses applied before improvements are effected. The marginal produce NT

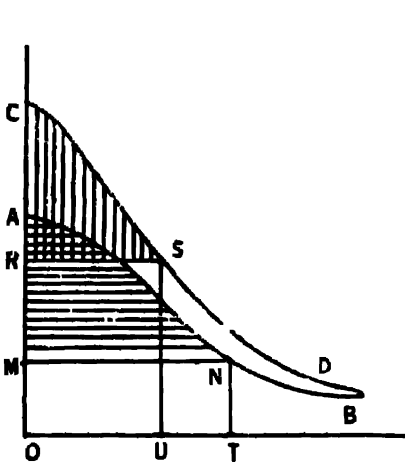


Fig 2

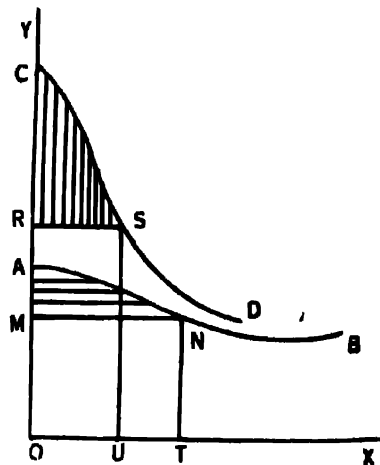


Fig 3

when sold just covers the cost of one dose. AMN represents the rent. After the land has been improved and the productivity curve raised to the position CD only OU number of doses are applied. That makes the total produce $COUS$ equal to the total produce $AOTN$ before the improvements. The rent is changed to CRS .

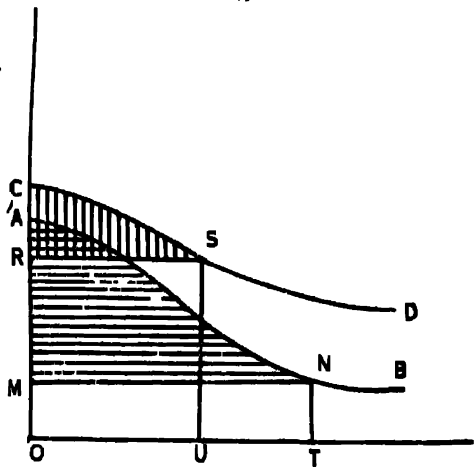


Fig 4

In figure 1 the rent after improvement is less than that before it. In figure 2 also it is less. In figure 3 it is more and in figure 4 it is again less.

Figure 1 illustrates the case in which improvements increase the productivity of all the doses equally. The case in which the productivity of initial doses is increased more than that of the latter doses (that is, in which the fertility of richer lands

is increased more than that of the poorer lands) is illustrated by the figures 2 and 3. Figure 4 represents the case in which poorer lands derive more benefit from improvements than the richer ones.

It can be readily seen from these diagrams that whatever the shape of the curve may be, corn-rent is bound to decrease when the improvement is of such a nature as to increase the productivity of all the doses by the same amount. Where the richer lands are more affected by the improvements the corn-rent may increase or decrease depending on the shapes of the curves before and after the improvement.

In all these cases it has been supposed that the total amount of produce raised from land remains the same. This is however most unlikely to happen even in a short period. The marginal produce is in all the cases increased to US and therefore the value of it more than covers the cost of 1 dose of capital and labour. Naturally therefore more doses would be applied. As more doses are applied and the total produce is increased the price of the produce falls. Eventually a point is reached where the value of the marginal produce again equals the cost of a dose. It is certain therefore in all these cases that more than OU doses would be applied after improvements have taken place. Rent after improvements would therefore be slightly greater than what it has been shown to be in each of the four cases. That would however leave our conclusions unaffected as far as the first and the third cases are concerned. In figure 2 it is possible that the rent after improvement may be greater than before it. In case 4 our conclusion is most likely to remain unaffected.

RENT AND INTEREST

In the beginning of this chapter it was emphasised that all material objects put to productive use are best called capital. Likewise, the income derived from the use of all such objects is best regarded as interest with a rent element in it. It was pointed out, further, that there is the land aspect in every material object and consequently an element of rent in the income derived from it. This view would warrant our regarding the so-called rent of land as mainly interest

on capital. But the warrant for so regarding it does not consist merely in the validity of this view. There is another reason of an allied nature why the income obtained from the so-called land should be called interest. Most of the plots of land, if not all that are at present earning income for their owners, have been purchased for a price from their previous owners. That is, land has gone on changing hands. Now, therefore, the income that the present owner of a piece of land obtains from it is interest not because its character and fertility were changed by the previous owners, but because the present owner had to make some monetary sacrifice in order to acquire it. For him therefore this piece of land is not a free gift. It is capital. Whatever element of rent there was in the income that it used to produce for the previous owner had been amortised when the purchase was made. The seller has got in a lump sum the discounted value of the rent that he would have earned year after year by keeping the land in his own possession. The buyer of the piece of land therefore pays a full value for the income that he expects to derive from it. For this reason there is no more element of rent in the income that the owner of a piece of land obtains from it than there is in the income that any owner of a machine earns. The only element of rent to be found in the income consists of the difference between it and the income that he would obtain from investing his money (that he has spent on the purchase of the land) in the next best thing.

It is important to remember this nature of the so called rent if we have not to make the mistake of thinking that the income of every owner of (the so-called) land contains a large surplus that could be heavily taxed. However, it may be mentioned that soon after a piece of land is purchased its value in many cases begins to rise again. Land being limited in supply, every increase of population and every increase in the national dividend raises the value of land. The income from land therefore often begins to contain an unearned element soon after it changes hand. Unless all such increments in the value of the land were foreseen, even the present holder of land must earn a surplus comparable to what the previous owner used to earn. The longer the period for which land is held by anyone owner the greater is likely to be the element of rent in the income that is obtained from its use.

CHAPTER XLIII

PROFIT

In ordinary language profit means the net income of the businessman. It is calculated by deducting from the gross receipts the total expenditure incurred by the businessman. Allowance is however made for the capital that he may have invested in his business. That is, interest on such capital, calculated at the market rate, is deducted from the gross receipts before arriving at the net figure for profit. The word profit is associated with business. Nobody ever calls the net income of a professional or a wage-earner profit, except when he makes a very loose use of the word. Nor does the popular mind ever consider whether a part of the income of such persons can rightly be regarded as profit.

For the economist this conception of the word profit is, however, too narrow to be of much use to him. Yet most of the earlier economists had some such narrow conception of this word. It is only in comparatively recent times that economists have defined profit in a wider sense. They now understand by the term profit the income of the entrepreneur. It is true that all the economists do not understand by the *income of the entrepreneur* precisely the same thing: yet they are at one in associating profit with enterprise rather than with any other word.

To understand precisely what *income of the entrepreneur* means, we have to see what entrepreneurship consists in. For unless we know that, we do not know whom to call an entrepreneur. For, it may be that the entrepreneur does not exist all by himself. He may be an organiser or even a capitalist and may yet be doing the work of an entrepreneur as well. In such cases, if only we knew what work to call enterprise (entrepreneurial duties), we could locate profit in the income of the person concerned. It would only remain for us thereafter to enquire why an enterpriser at all earns an income and how that income is determined.

MEANING OF THE WORD ENTERPRISE

This word is of comparatively modern origin. Marshall does not mention enterprise as a factor of production. He

speaks, however, of organisation, calling it the fourth factor of production. But while enumerating the duties and functions of the organiser he includes all that we to-day regard as the work of an entrepreneur. Many economists since Marshall, have used this word widely. But they do not all mean precisely the same thing by enterprise. Some still seem to make no clear distinction between organisation and enterprise. For instance, Benham says, "we shall use the term entrepreneur to mean the person or group of persons controlling the policy of a firm". And the entrepreneur has, he further says, to decide what industry shall he enter ? What commodities, services shall he produce ? What shall be the size of his plant ? What shall be the size of his firm ? What methods of production shall he adopt ? Where should his plant or plants be located ? And, we may add, where shall he sell his goods ? At what price shall he sell his goods ? Shall he practise discrimination in case that is possible ? What part of the stock that is ready shall he sell at the prevailing price and what amount shall he hold over for sale at some future date ?

It must be clear that duties such as these are performed by the organiser. And in taking decisions on such matters a man may not have to risk anything. If he is a paid organiser and is entrusted with the above duties, he obviously takes no risk. For he gets his fixed salary. If however, he is the owner of the business and does all this work, he certainly does take some risk.

Since organising work and risk-taking do not necessarily go together, it is proper to keep the duties of an organiser distinct from those of an entrepreneur. Otherwise it does not become clear whether the income of the entrepreneur is necessarily uncertain, and we are unable to point out the fact that the income of the entrepreneur is of the nature of a remuneration for risk-taking.

There are other economists too like Benham who do not make a clear distinction between organisation and enterprise. For instance, Mc Issac and Smith say that, "it (enterprise) consists essentially of the effort on the part of individuals or groups to direct the use of economic agents in such a way as

to gain an income by advantage of profit opportunities evident in the structure of current and prospective prices." The undertaking of economic activity is a very wide category—too wide to be identified with enterprise. But they come nearer the point when they say that the entrepreneurs exploit profit opportunities. Yet they do not quite hit the point. They do not make it clear whether the entrepreneur is one who himself takes risk or one who merely tries to secure profit for another.

Such vagueness in the definition of the word entrepreneur is responsible for a corresponding vagueness in the meaning of the word profit. Happily there are some who have taken pains to differentiate organisation from enterprise and have associated profit exclusively with the latter.

The owner of a business often does two things. In the first place, he organises or plants his entire business, i.e. he co-ordinates the factors of production and decides what to produce, where to produce, how to produce and how and where to sell. In the second place, he takes the risk of possible failure of the business. He may fail altogether in his business or may not be as successful as he had hoped to be. In either case, he is the loser. For, he may in such circumstances not make enough money to compensate himself for the work and worry of the business; he may even have to draw upon his reserves to pay the hired factors.

The former of the two functions that a businessman ordinarily performs may be called decision-taking; the latter risk-taking. Decision-taking consists in determining the things to be done. A labourer, as a labourer, has no decisions to take. Whatever he does is decided for him by others. The second function is called risk-taking. It consists in making oneself responsible for any loss that may occur in the course of the business. Incidentally it may be noted that he who takes such a responsibility does not always lose. For, if there is a profit it also accrues to him.

The first function of decision-taking is sometimes delegated by a big businessman to some paid employees and he himself takes decision only on rare occasions on important and vital matters. A small businessman cannot easily afford

to do so. On the contrary, he often performs a third task also; he supervises himself the work of his paid employees.

While a businessman may thus perform all these functions and possibly some more, he really performs them in different capacities. If he performs two functions, he combines in himself two agents of production. Decision-taking and supervision work he does in his capacity as an organiser. The risk-taking function he performs in his capacity as an entrepreneur. It is wrong to say that as an entrepreneur he takes decision or supervises the work of others. As an entrepreneur he can only do the risk-taking work.

When the businessman does also the organising work, he includes in his cost of production a remuneration for that work, calculated on the basis of the market rate. And he appropriates that amount or, we may say, pays himself that remuneration in much the same way in which he pays the hired factors. Just as the hired factors' incomes are certain, the businessman's salary for his organising work is also certain. If the business fails badly, it is true, the hired factors do not get, in some cases, their full remuneration. The businessman also does not get his full salary for the organising work he does. But that only goes to show that labourers and other factors too have some risk to take. They are all, therefore, entrepreneurs to some extent.

Whether a businessman does the organising work or not, he must do the risk-taking work. Every act of production is risky. The degree of risk may be very small: but it is there nevertheless. Somebody must therefore bear these risks of production. It is naturally the owner who bears these risks. Or we might say that he who takes such risks is known as the owner. Thus, in the case of a joint-stock organisation, the shareholders are known as the owners. That is so because they are the risk-takers. It is another matter if all the shareholders do not share the responsibility equally. The responsibility of all of them may even be strictly limited. But they are all the same the risk-takers of the business.

So the entrepreneur is the owner (or the owner is the entrepreneur) and while he may suffer a loss at times, he earns

a surplus also. For, the owner is after all the claimant of all residual incomes. But the expectations of gains are not always high enough to balance the apprehension of losses. And that is why risk-taking involves some sacrifice of mental peace, a sacrifice that no body is willing to make without a remuneration. Hence, the function of risk-taking has also to be paid for. Since it is the owner alone who can take the risk of the business, he has to pay himself for this risk, just as he pays himself for the organising work. This payment for risk-taking is called *profit*. It is therefore a certain and definite income just like wages and interest. And like them it is a cost item. It enters into the cost of production. It is a payment for a necessary function.

NATURE OF RISKS

Let us now see what is the precise nature of the risks that an entrepreneur takes. Risk essentially consists in the possibility of our expectations not being realised. If you are sure of certain results or certain things happening in the future, you are not taking any risk. And that would be so even if actually the future were to turn out to be other than what you had expected it to be. So long as you think that the future is certain, there is no risk for you. Conversely, you are said to be taking risks when you are in doubt about the future. It matters little whether the future turns out to be as expected or not. Thus, the existence of risks depends on the knowledge that there is a possibility of the future turning out to be different from one's expectations.

The above consideration indicates that there are certain conditions necessary for the existence of risks. First, there must be an undertaking in which the future is involved. For, there can be no doubt about the present. Unfortunately the future is involved in all acts of production. Production is a process that extends over time. In some cases the period of time over which it extends is very small, in other cases it is sufficiently big. The results of an act of production are therefore in the future. The entrepreneur, who guarantees fixed payments to the hired factors of production, has therefore to make a guess about the future. His intelligence, his experience of the past and the available statistics help him to make

a guess that is not usually very incorrect. In spite of these aids, he often finds that his guess turns out to be very incorrect. That is why there is risk in production.

The second condition for the existence of risks is that the future should be different from the present at least, in certain respects. For, were the future to be exactly similar to the present there would be no necessity of making a guess. At any rate the future should not always be the same as the present and there should be no regularity about the way in which the future differs from the present. These conditions are found to obtain in the real world. The world in which we are living is a changing world. Economists call that a dynamic world, or a dynamic state. In such a dynamic state there can be no certainty about the manner in which the future changes.

The third condition for risks is that man's foresight or his ability to foresee the future should be imperfect. For, unless that is so the future cannot deceive him. Imperfection of foresight guarantees that his expectations of the future will not be fully realised. At times the future may by chance turn out to be just as expected. But such accidents do not and cannot repeat themselves, without limit.

Now, imperfection of foresight is a phrase that has to be understood in a wide sense. It does not mean that an individual's foresight should be imperfect. Of course, if the entrepreneur has imperfect foresight and knows that his foresight is imperfect then risks exist for him. But were the entrepreneurs to have only imperfect foresight the risks could possibly be avoided. What is required is that the entrepreneurs should have no means of making their foresight perfect. Statistics, his experience or that of others, his own intelligence or that of others to whom he has access, should all prove insufficient to remedy the imperfection of his foresight.

Lastly, as just noted, not only should foresight be imperfect, but the entrepreneurs should *know* that their foresight is imperfect. For, otherwise they would not know what they are risking.

Now, there are certain future events which can to an extent be foreseen. Statistics help us to forecast the future events in certain fields. Changes in such cases can therefore be more or less accurately foreseen. They can therefore be insured against. Some economists, such as Professor Knight have called them insurable risks. And they have rightly maintained that insurable risks are no risks. Insurance companies that insure, for instance, the lives of men, do not really take any risk. They are never certain about the day when a particular policyholder would die and therefore never also about the amount that they would have to pay him. But they are certain about their aggregate liability per year over a long period. Yet there are some small risks that they do have to take. They can never be sure of what their profits would be five years hence. However, the example of insurance companies enable us to make a distinction between the two kinds of risks; those that are insurable and those that are not. It is only the latter category of risks that are risks in the real economic sense.

We have stated above the various conditions under which production becomes risky. Of these the most important for our purpose is that of the dynamic state. Unless the world is dynamic there are no risks. Of course, that is not the sufficient condition for the existence of risks. But it certainly is essential and very important too.

The less dynamic the world the less risky is production, provided, of course, the other things remain the same. Again, the more perfect our foresight the smaller are risks. And smaller they are, again, the less we realise that our foresight is imperfect.

Supply and Demand of Risk-Taking and Profit.

We have seen that profit is the remuneration for risk-taking. Whether this remuneration is high or low would therefore depend on the supply of and the demand for risk-taking. The supply of risk-taking comes from the entrepreneurs or the people who are willing to take risks while the demand for it comes from the other (hired) factors of production like labourers and capitalists who are not them-

selves willing to take the risks attendant on an act of production. Profit therefore depends on the supply and demand of risk-taking, a thing that is bought and sold like any other service. Just as the supply of labour is determined by the cost of production of labour, the supply of risk-taking is determined by the cost of taking risks. A labourer's cost of supplying labour consists of the irksomeness of physical exertion. He dislikes such exertion, and consequently offers his services as a labourer only when he is promised an adequate compensation. The amount of labour that he supplies is therefore determined by the equality of wage with marginal sacrifice of work. When there is imperfect competition in the market for labour the equality that determines the supply of labour is between the marginal income of the labourer and the marginal sacrifice of labouring.

What is true of labour is also true of risk-taking. The entrepreneur takes risk. Risk-taking is also irksome. He needs a compensation for it. The greater the compensation the greater the amount of risk that he comes forward to take. The supply is governed here by the equality of the profit per unit of risk-taking with the irksomeness of taking risks. As we have already seen, risks are due to uncertainty about the future. The entrepreneur is never absolutely certain about what he will be able to realise from the sale of his goods. This uncertainty about his income is irksome. The greater his stakes the greater are his sacrifices. The sacrifice of mental peace that the marginal unit of risk-taking involves must equal the remuneration that it brings to him in terms of profit.

The cost of taking risks is high when people are cautious and lack the spirit of adventure. Were all the people to become extremely cautious and unwilling to take any chances, nobody would be forthcoming to shoulder the risks of production. The price of risk-taking, that is, profit, would then soar infinitely high. The cost of taking risks is therefore high when people are timid and cautious. In the case of labour, likewise, the cost of supplying labour would be high when workers are physically weak or mentally lazy. And wages would then have to be quite high. A cautious man suffers more when he takes up a risky job. His mental suffer-

ing constitutes the cost of taking risks. The supply of risk-taking therefore depends on the number of adventurous people in a community. The supply increases as the remuneration rises.

The supply of risk-taking, it might be noted, does not depend merely on the spirit of adventure. It depends also on the ignorance of the people about the risky nature of production. The more fully they realise the risks attendant on production the less willing they become to act as entrepreneurs. In a country where much ignorance about the extent of risks involved prevails, or to be more correct, where due to ignorance people are unduly optimistic about the future, profits are low. For, a small amount of profit in such cases is sufficient to call forth a great supply of entrepreneurs.

The supply curve of risk-taking which shows the number of people willing to take up risks of a given magnitude at different rates of remuneration, is therefore dependent on the above two considerations. We therefore expect profits to be high, other things being equal, when people are cautious and fully realise (or over-estimate) the risk involved in production. And the supply of risk-taking does not merely depend on the number of people willing to become entrepreneurs. It depends also on the amount of risk that each entrepreneur comes forward to take. There are here, as in the case of other factors, both internal and external margins. Due to these two kinds of expansion, production increases when the supply of risk-taking increases. Just as production increases other things being equal, with the supply of labour, so also does it increase with the supply of enterprise.

So much about the supply of risk-taking. What about the demand for risk-taking? Labour is supplied by the labourers and demanded by the employer, i.e., the entrepreneur. Risk-taking is supplied by the entrepreneur and demanded by the employed factors, i.e., labourers, capitalists and organisers. They demand risk-taking because they are not willing themselves to take risks. The entrepreneur demands labour because he is not willing himself to labour. Similarly the labourer (or the organiser and the capitalist) demands risk-taking because he is not willing himself to take

risks. Let us argue here as if the only hired factor was labour. That would simplify our analysis without imposing any damaging limitations on the economic model under consideration. Then, we can say, that it is the labourer that demands risk-taking. He has to pay for the function of risk-taking that the entrepreneur supplies. He gets in return the benefit that accrues to him from not having to take risk himself. If the benefit is greater than the payment he has to make, he willingly accepts the services of the entrepreneur. Equilibrium is reached when the benefit from the last unit of service rendered by the entrepreneur is just equal to the payment he has to make for it. In technical language we would say that in equilibrium the marginal benefit is equal to the marginal cost. Now, this benefit that accrues to the labourer from the risk-taking services that the entrepreneur supplies may be called the productivity of enterprise or of risk-taking. The advantage in so calling it is that we can say here as elsewhere that the remuneration for risk-taking, i.e., profit, is equal to the marginal productivity of risk-taking. When a labourer employs, as it were, one more unit of risk-taking some addition is made to the produce. We can calculate this marginal productivity in the following way.

Suppose a labourer is paid at the rate of Rs. 10/- per hour of work. If he works for 10 hours he gets Rs. 100/-. Let us suppose also that the entrepreneur gets as profit (remuneration for risk-taking) Rs. 50/-. It means then that Rs. 150/- worth of things are produced within ten hours. For his labour the labourer is paid Rs. 100/-, while the entrepreneur gets Rs. 50/- for the risk involved in producing things worth Rs. 150/-. Now suppose the labourer decides to work for an hour more. And suppose that by thus working for 11 hours he is able to produce things worth Rs. 165/-. If the entrepreneur is paid at the same rate as before, that is, one-third of the value produced, he would have to be paid now Rs. 55/-. The labourer would in that case be left with Rs. 110/-. He would calculate that he has worked for 11 hours and has obtained wages of Rs. 110/- that is, at the same old rate of Rs. 10/- per hour. What is the marginal productivity of risk-taking? The labourer has used one more unit of risk-taking (calling this an unit) and in so doing had to employ

one hour's more labour. The addition to produce is worth Rs. 15/-; for the total output has increased from Rs. 150/- to Rs. 165/-. From this he deducts the extra cost incurred on labour. That is, he deducts Rs. 10/-. And he is left with Rs. 5/-. Rs. 5/- is then the (net) marginal productivity of risk-taking. Profit is therefore equal to this net productivity. Profit calculated per hour of work is Rs. 5/-, just as it was when the labourer was working for 10 hours only.

Thus, we can say that in equilibrium the rate of profit equals the marginal (net) productivity of risk-taking. It must be remembered here that it is not possible to increase risk-taking without increasing the other factors of production. For, risk increases only when a larger amount is produced, provided that other things remain the same. And a larger quantity cannot be produced without increasing the other factors of production. Hence, marginal productivity of risk-taking can be calculated by increasing the amounts of hired factors and by subtracting from the addition made to the total produce the cost incurred on these hired factors in producing this additional output. In short, we can calculate only the marginal net productivity of enterprise.

But that is not peculiar to enterprise only. Even labour cannot produce unless it has some other factors to co-operate with. If you employ one more labourer it must be supplied with some raw materials to work on. Unless that is done there is no productivity of this additional labourer.

The above explanation of profit makes it abundantly clear that it is as much a constituent of the cost of production of a commodity as wages, salaries and interest are. Hence, when the price of a commodity equals and just equals the average cost of production the entrepreneur gets his remuneration for risk-taking determined as described above. If, however, the price turns out to be higher than expected, a surplus is left over after the hired factors are paid and the entrepreneur has appropriated his own remuneration for the risk he has taken. This accidental surplus should not be confused with profit. Ordinarily these two sums are lumped together and are called profit. But theoretical precision demands that they may be kept separate and named differently.

Profit is the remuneration, and a necessary remuneration, for the risks of production. It is an element of cost of production. It is therefore always positive, just as any other cost element is. The entrepreneur must get his profit as the labourer must get his wages, or the capitalist his interest. Any surplus left over after this profit is appropriated is best called *accidental gain*. And if, instead of such a surplus there is a deficit, due to the price having turned out to be less than expected, we call it *accidental loss*. This loss should also be kept distinct from profit and not allowed to eat it up. Profit must always be shown as a positive income, and accidental loss should be shown as having been incurred after the profits have been appropriated. The table below shows how profit and accidental gains and losses are calculated.

PROFIT DIFFERENTIATED FROM ACCIDENTAL GAIN

Table showing the accounts of a single producer in a competitive market

| | Expected Price Rs. 1-1-0 | Actual Price Rs. 1-1-0 | Actual Price Rs. 0-15-9 |
|---|-----------------------------|---------------------------|----------------------------|
| | Rs. s. p. | Rs. s. p. | Rs. s. p. |
| Output 1800 units | 1,800 0 0 | 1,912 8 0 | 1,743 12 0 |
| Wages | 1,000 0 0 | 1,000 0 0 | 1,000 0 0 |
| Interest including depreciation, and rent | 500 0 0 | 500 0 0 | 500 0 0 |
| Salary of organisers | 200 0 0 | 200 0 0 | 200 0 0 |
| Profit (remuneration for risk-taking) | 100 0 0 | 100 0 0 | 100 0 0 |
| Total cost | 1,800 0 0 | 1,800 0 0 | 1,800 0 0 |
| Accidental Gain | Nil | 112 8 0 | |
| Accidental Loss | Nil | | 56 4 0 |
| Cost+gain or cost-loss | 1,800 0 0 | 1,912 8 0 | 1,743 12 0 |

Older Theories of Profit Criticised

We have explained the correct theory of profit above. It remains for us now to examine some other theories of profit and see how far they fall in line with the one we have already explained. Let us begin with Marshall's views on profit.

Marshall's Theory. Marshall makes a distinction between gross and net profits. The former includes the wages of labour and interest on capital which the latter does not. The earnings of the entrepreneur consist of wages of labour, interest on capital, rent of land (when the entrepreneur uses his own land) remuneration for the work of management and rent of ability. Marshall excludes the first two from net profit and perhaps also the last element from true profits.

For Marshall, management consists in organising and devising new methods and in taking risks. The first of these two is the work of reducing risks; the second of taking risks. The former involves mental work, the latter anxiety and fear. For Marshall these two kinds of work can not be separated. Profit is therefore the remuneration for this combined work of management.

Marshall's conception of profit differs from ours in so far as he includes in profit, besides the remuneration for risk-taking, the salary of organising work. The other point of difference is that Marshall does not clearly differentiate profit from accidental gain. He seems to think however that in the long run the earnings of an average entrepreneur do not contain any element of accidental gain.

The similarity between our view of profit and that of Marshall is based on two features. First, according to both the views, profit is included in cost. Second, profit excludes interest on capital and wages of labour.

The first point of similarity Marshall shares with some classical economists. Adam Smith, Malthus, Ricardo and Mill all maintained that profits enter into the cost of production. Adam Smith regarded profit as a payment for the risk taken and the services performed by the entrepreneur in pro-

duction. Ricardo also explains profit as a surplus above the return of labour which compensates the employer for the usual risk and trouble encountered in employing capital productively. Mill also emphasises risk-taking as a special function of the entrepreneur and maintains that profit is an adequate compensation for some additional risk over that incurred upon idle capital.

The classical conception of profit as a cost element is therefore in conformity with our view of profit as stated in this chapter. The only refinement needed however is that the remuneration of the entrepreneur for the organising work that he may, and almost always does, should be separated from the remuneration for risk taking. As a matter of fact the entrepreneur in his capacity as an entrepreneur cannot do any other work than that of merely taking upon himself the risks attendant on production. Further, some distinction should also be made between profit and accidental gain. Perhaps the classical economists thought that in the long run accidental gains tend to be eaten up by accidental losses. That may or may not be true; but the distinction is important and leads to a better understanding of any theory of profit.

Walker's theory. In sharp contrast to this cost theory of profit is President Walker's *surplus theory*. He realised perhaps the place of accidental and therefore surplus gains in the incomes of entrepreneurs. Mere remuneration for risk-taking cannot account for the very large profits that producers often make. He therefore takes profit outside the cost of production, and defines it as the difference between the earning of an entrepreneur and that of the marginal one. Like rent he measures profit from the marginal no-profit income of the entrepreneur. He argued that entrepreneurs have natural and scarce ability. The use of this ability produces an income for them. But the entrepreneur who is at the margin is able to get no price for this ability. Or to be more correct, the word profit has to be used to designate the difference between the prices of this ability. What the marginal entrepreneur gets is to be included in the cost of production. Clearly enough, Walker's profit is the rent element in the earnings of organisers. The work that the entrepreneur does in his capacity as the organiser of pro-

duction (employing capital productively and reducing the risks to which it is exposed) differs from entrepreneur to entrepreneur. He who has a greater natural ability earns more than he who has less. It is therefore the rent of natural organising ability.

Andrew's theory. It is not clear whether Walker's profit⁴ includes accidental gains. Perhaps it includes that part of accidental gain that is over and above the accidental gain made by the no-profit entrepreneur. President Andrews is however more clear on this point. Holding more or less identical views with Walker he yet differentiates gains of opportunity due to chance from income obtained from the use of natural ability.

Views of Walras and Gide. Such a view of profit as a surplus above the cost of production has been held by continental writers also. Walras for instance says that when there is free competition the price of a product just equals its price, and concludes that the normal rate of profit is therefore zero. Gide also makes profit a surplus above cost. The surplus, he says, is possible when the entrepreneur is in possession of some sort of monopoly. There must be scarcity of what the entrepreneur offers for sale, otherwise, Gide maintains, there would be no profit. His exposition may not be clear but it is obvious that he regards profits as a surplus above the cost of production.

Clark's theory. John Bates Clark's theory is known popularly as the dynamic theory of profit. He maintains and rightly too that profits arise only in the dynamic state. In the static state there are no profits as there are no risks and no necessity of taking vital decisions. His views on profit are similar to our own inasmuch as he makes change (and therefore uncertainty) an essential condition for the emergence of profits. But while we have defined profit as the remuneration for risk-taking, Clark includes in it also a remuneration for the organising work done by the businessman. He says, for instance, "we shall see that in dynamic industry there is a normal way in which he (the businessman) may get an income without taking anything from the incomes that labour and capital would get if he did not perform his part. His return may

come from the result of an enabling act which he performs, whereby both the labour and the capital of a particular subgroup become more productive than other labour and capital are and more so than they would be if the entrepreneur's enabling act were not performed."

Thus, for Clark, the entrepreneur's income is due to the fact that he makes the efforts of labourers and capitalists more productive than what they would otherwise have been. The entrepreneur thus does some work besides merely taking the risk of production. This contrasts sharply with what Clark says at another place. Explaining how a man can be an entrepreneur only, he says, "If a man should hire all the capital that he needs in a business, and also all the labour, including the labour of every man in the office force and resides thereafter in a distant country, holding no consultations with his managers, whatever income he might get would be purely an entrepreneur's profit." Here Clark makes the entrepreneur merely the bearer of risks. He does not do any work, for he holds no consultations with his managers. It is surprising, therefore, that while describing the emergence of profits in the dynamic state he attributes to the entrepreneur the task of increasing the productivity of co-operating factors. He would have been consistent had he strictly adhered, literally and in spirit, to the word "enabling" that he uses above.

Nor is it clear whether Clark would include chance gains in profit. Perhaps he would. For he makes the entire difference between receipts and cost equal to profit.

Knight's theory. We come now to Professor Knight's theory of profit. His views on profit are stated at length in his book "Risk, Uncertainty and Profit" published in 1921. What his views are today we do not very well know. But the views he held in 1921 remained more or less unaltered till 1933. Thereafter, however, he appears to have modified his views in certain directions as is evident from some of his articles and reviews of books. We shall confine ourselves to his theory as contained in the book referred to above.

Professor Knight says that there is no profit in a changeless economy. There is no entrepreneur in such an economy

for there is no necessity of decision-taking and shouldering the responsibility thereof. In an economy characterised by change there is the necessity of forecasting the future and accordingly taking important decisions. Since our forecasts cannot always be correct he who performs the function of forecasting the future knows that he is taking risks in assuming the responsibility of taking decisions based on his forecasts. The entrepreneur guarantees fixed payments to hired factors and their remunerations are imputable and determinable. But the income of the entrepreneur is not imputable; it is residual. It is what is left over after the incomes of other factors are determined.

Here there is the first important difference between Professor Knight's theory and our own. According to us profit is a remuneration for the entrepreneur's function of risk-taking and is as such determined like any other income. Professor Knight makes profit a purely residual income. It therefore includes what we have called accidental gain (or accidental loss). For us, the entrepreneur is the mere taker of risk and whatever he happens to get over and above what is his due share as risk-taker, he gets in his capacity other than that of the risk-taker.

The difference between the two views can therefore be traced to the difference in the meaning of the word entrepreneur. For us, the function of an entrepreneur consists merely in putting oneself in an uncertain state of the mind, a state of mind in which the financial results of an act are not clearly perceivable. Professor Knight says, on the other hand, that it is the function of the entrepreneur to direct and control productive activities, forecast the future and take the responsibility of the decisions made on the basis of those forecasts. The direction and control of productive activities, as Professor Knight himself says, is a function that someone has to perform even in a changeless economy. It is therefore not in the strict sense of the word entrepreneurial function to direct and control a productive enterprise. This part of the work may therefore be called, in our terminology, organisation. But, as Professor Knight rightly points out, the work of control and direction of operations becomes merely a routine business in an economy where uncertainty

is absent. It is doubtful whether in a such an economy there would be any scope for the exercise of intelligence. And in so far as organisation is a kind of mental work requiring the use of intellect, it is doubtful whether even organisation can be said to exist as a factor of production in the hypothetical changeless economy. We need not go into the details of this question, however, as a society with uncertainty absent has no practical interest for us.

Hence, concludes Professor Knight, the entrepreneur earns an income that can be divided into two parts. In the first place, he gets his remuneration like any other worker for the work of direction and control of economic activities. Over and above this he earns an income in his capacity as the true entrepreneur, for the work of exercise of judgement and taking of decision and shouldering the responsibilities thereof. In short, his second part of income is due to decision-taking and risk-taking. Professor Knight thinks that the income due to these two kinds of work cannot be effectively separated. As a matter of fact he believes that even the first part of his income that he earn as his remuneration for the work of direction and control cannot be accurately determined. Speaking about it he says, "This return is merely the competitive rate of pay for the grade of ability or kind of property in question. To be sure, it may not be possible in practice to say exactly what this rate is. Not merely is perfect standardization of things and services unattainable under the fluctuating conditions of real life, but in addition the conditions of the entrepreneur specialization may well bring it about that the same things are not done under closely comparable conditions by entrepreneur and non-entrepreneurs. Hence the separation between the pure wage or rent element and the elements arising out of uncertainty cannot generally be made with complete accuracy".

This probably is correct. In the conditions that obtain in the real world it is not possible to separate the two elements of the entrepreneur's earnings with accuracy. The difficulty however is encountered only when an attempt is made actually to separate the various elements of the entrepreneur's earning. In theory, it is easy to imagine the two elements of income separately and to explain the forces that go to determine them.

And the difficulty is further minimised when the word entrepreneur is so defined as to signify only his aspect as a risk-taker.

Assuming that somehow the first part of the income can be separately determined and called, say, the wages of management, it still remains to see whether profit is the remuneration for the work of making decisions or taking upon oneself the risk attendant on them. Professor Knight's views on this point deserve notice. It will be recalled that according to our theory of profit, profit is merely the remuneration for the function of taking risks. Income obtained from decision-taking work, we have preferred to include in the salary of organisation. Professor Knight however regards it as a part of profit. The entrepreneur, says he, cannot delegate the work of decision taking to another person. It is, as it were a part and parcel of his function as the risk taker. He therefore considers it necessary to widen the connotation of the word so as to make it absorb the remuneration for the work of making decisions. "The essence of enterprise" he says, "is the specialization of the function of *responsible direction* of economic life, the neglected feature of which is the inseparability of these *two* elements, *responsibility* and *control*..... Any degree of effective exercise of judgement, or making decisions, is in a free society coupled with a corresponding degree of uncertainty-bearing, of taking the responsibility for those decisions."

Professor Knight considers the theoretical possibility of separating the two functions: one man may only make decisions and another take risks. But he believes such a separation is too unrealistic to be considered seriously. If the entrepreneur does not perform the day to day work of taking decisions, says Professor Knight, he at least takes decision upon the important question of who is the fittest person to whom the daily work of making decisions can be delegated. Whether Professor Knight is absolutely correct here it is difficult to say. It seems to us, however, that the nature of the two functions is so clearly different that no violence is done to theory by supposing that a person earns the two corresponding elements of income in his two separate capacities. While then for Professor Knight profit includes

both the remuneration for risk-taking and that for the organiser's work of making decisions, for us it comprises only the first type of remuneration.

There is however another and perhaps equally important point of difference between Professor Knight's and our conception of profit. Profit, for Professor Knight, is a residual income. Whatever remains after the other factors are paid is the income of the entrepreneur; and that income he calls profit. Thus profit includes over and above the two kinds of incomes noted above, any accidental and unforeseen gain. And if there is any unexpected loss, profit is less by that amount. This element in the makeup of Professor Knight's profit may at times eat up entire income that the entrepreneur has earned for the work he has done. Thus, profit might at times be zero or negative. Such a possibility is due to the fact that profit is made up of three distinct elements. It does not lead to clarity of thought to give one name to a combination of three different things.

Professor Knight, who lumps together the earning of risk-taking and accidental gain or loss, says in this connection: "The character of the entrepreneur's income is evidently complex, and the relations of its component elements subtle. It contains an element which is ordinary contractual income, received on the ground of routine services performed by the entrepreneur personally for the business (wages) or earned by property which belongs to him (rent or capital return). And the differential element is again complex, for it is clear that there is an element of calculation and an element of luck in it."

This completes our examination of some of the theories of profit. We pass on now to the consideration of the difference between rent and profit.

RENT AND PROFIT CONTRASTED

It is often thought that rent and profit are surpluses alike in most respects. And often the only difference made between them is that while rent is surplus that accrues in all cases profit is one that accrues only in the dynamic state. The error in this view should be obvious to those who have followed the

foregoing pages carefully. Profit, it has been pointed out there, is not a surplus in any sense of the term. It is the earning of risk taking. It is a cost element as much as wage or interest is. The only difference between profit and wage or interest is that the former is to be found only in the dynamic state, while the latter is found in both the static and dynamic states. There is therefore no ground on which one can possibly compare rent with profit.

It, however, we understand by profit the accidental gain that accrues at times in the dynamic state, rent and profit both become surplus. There is then a common characteristic possessed by them. But there is then a difference between the nature of these two surpluses. Rent, a surplus that accrues both in the static and the dynamic states, profit (accidental gain) belongs only to the dynamic state. Rent surplus is due to scarcity, specifically due to the fact that the thing earning the rent is a free gift of nature. Free goods, specificity, and free gift, have of course to be understood in their widest sense as explained in the chapter on rent. Profit surplus, on the other hand, is due to errors in forecast—defective foresight. Rent accrues because you are in possession of a scarce object; profit accrues because you have a defective foresight (and as Professor Knight says, it is greater the more defective foresight others have as compared to you). Rent surplus in the widest sense as a surplus above opportunity cost arises when an agent cannot be put to several uses, that is, when it is not divisible or immobile in the widest sense. Profit is a surplus arises when due to imperfect foresight you anticipate less than what you actually get in the end. Rent is an expected surplus, profit is an unexpected surplus. Rent is positive, profit may be negative in which case it is called loss. It must be remembered however that we have here used the word profit in the (erroneous) sense of accidental gain. Profit is the result of risk taking; he who takes risk may get a profit or incur a loss. It is therefore an outcome of gambling. Rent is not. The gambling that results in profit or loss is, it must be mentioned one that is essential for every productive activity undertaken by men with imperfect foresight.

PART VII
Money and Foreign Exchanges

MONEY

The origin of money. The use of money seems to have resulted from the inconveniences which were experienced in barter exchange. For then every man could not make all the articles of his choice so that others had to be found who could give him such articles as he did not possess himself in exchange for his own. The chief handicap in barter economy lies in the difficulty with which men are available who are willing to exchange their articles with the articles of other men. That is due to the lack of coincidence of their respective wants. If some men want milk and butter in exchange for their caps and shoes those who can provide them with these articles might not be wanting caps and shoes. And in such a situation exchange cannot take place unless people are available who want caps and shoes in exchange for milk and butter. But the difficulties are not over in the mere availability of such men. Those making the exchange would have to find out the values of milk and butter in terms of caps and shoes jointly and separately. And further when caps and shoes are later exchanged for a variety of other articles a valuation of their separate prices in terms of these articles has again to be done. The price of a cap would be expressed in no single measure of value but in a variety of things which might range from cabbage to the crown. As with this cap, so with every other article with which this cap might exchange itself in society. Nor is the difficulty over when evaluation in terms of hundreds of other articles has been done somehow. If one cap is to exchange for one seer of milk, how many will exchange for a seer and a half? Surely if the cap is cut into two, it becomes no better than a cloth duster and might not be wanted any more. And if this cutting is not done, either more milk must be parted with so that two cap might reach the milkman or one cap must be parted with so that a full round seer of milk might reach the cap seller. This implies that either the milk seller must demand more caps than he would have originally wanted or the cap seller must demand more milk than he needs to consume.

Barter thus leads to the inconveniences, first of finding men who mutually demand each other's articles and then of evaluating the price of each goods sold by men, in terms of all such articles as the seller of the goods in question might want in exchange; and lastly of sub-dividing the articles of exchange in case such a need arises.

Money has helped men rid themselves of these inconveniences. And consequently its use has become widespread and in the particular set-up of the modern world economy, almost indispensable.

Definition of money. Let us define money and see what specific functions it discharges in human society. Money has been variously defined by various authors. We will not spend time in analysing the various definitions and then finding for ourselves the correct one. We will rather accept as correct a definition that is widely accepted by economists. Such a definition is Prof. Robertson's. Money, he says, denotes anything which is widely accepted in payment for goods or in discharge of other kind of business obligations. The chief characteristic of money is its wide acceptability. As he puts it: "If things which are intended to be money – the notes of certain Governments for instance – cease to be widely accepted in discharge of obligations they cease to function as money and.....to be money. On the other hand, if things which have not been hitherto considered as money such as tobacco or cigarettes or tins of bully beef, become widely accepted in discharge of obligations, they become..... money."

Functions of money. But for a thing to be widely acceptable, it is necessary that it should be expressible in terms of a measure or standard of value of things in general. A cheque is a widely acceptable thing because it can be expressed in this country in terms of rupees, annas and pies which help us to measure the value of all the goods produced and exchanged for purposes of consumption. Cheques in India would cease to be widely acceptable if they were not to represent rupees. For, then they would cease to express a common measure of value. Men accept cheques because they know that after they are encashed they can easily purchase any

article they need for their satisfaction. Like cheques, then, nothing would be generally accepted unless it was capable of being expressed in terms of a common measure of value. Money thus is something which is expressible in terms of a common measure or a standard of value for then alone can it be widely acceptable.

It is the quality of money that it represents a command over goods in general which makes it perform the functions commonly assigned to it. Money, they say, is a medium of exchange and facilitates the buying and selling of goods and services. Whether it be a cap seller or a seller of milk, he will be able to satisfy his demands with the money he gets from the sale of his goods without having to bother about finding people who need his goods in exchange for their own. A cap seller who wants milk will sell his caps for money and then purchase milk with that money. The milk seller might or might not need caps, but he will always accept money in exchange for milk knowing that he can at any time exchange it for whatever he wants. Money thus brings about exchange even between parties that do not need each other's goods.

Being a unit of account i.e., something in terms of which the value of all goods can be accounted or evaluated it naturally helps us to fix our choices of goods and the various amounts of them without the least difficulty. And so it facilitates the achievement of maximum satisfaction which is the economic end of all human behaviour.

A further function of money consists in its being what they call, a standard of deferred payments. When prompt payments are made, money, we can see, serves as a standard for such payments. When payments are to be made after some time as when a loan is returned or commodities paid for, months after they are purchased, values are again reckoned or expressed in terms of money. What is important here to note is the fact that a unit of money—a rupee, for example which serves as a standard for prompt present payments serves also as a standard for future payments considered as possessing the same purchasing power as it has in the present. Present contracts involving future payments do not take as standard the future purchasing power of money. If a hundred rupees'

debt contracted today is to be paid back after a year then only hundred rupees would be paid back after that time despite the rupee having become weaker in its purchasing power. If one has contracted to receive fifty articles after a year at the average rate of five rupees an article, which happens to be the rate today, one must pay two hundred and fifty rupees to his seller even if the articles in question are being sold at four rupees an article at the time of payment.

The next function of money is to serve as a convenient store of value. We have seen above that money being a common measure or standard of value has the power of commanding other goods in exchange for itself. And so when people store money they have the satisfaction that they can with the help of that store or a part of it purchase *any* article for their consumption. Such satisfaction is lacking in the case of cloth which if stored would not enable them to buy any article they liked. A further advantage when money is used as a store of value lies in its being less perishable than other goods. Cloth might be eaten up by white ants but coins cannot. Again the capacity of a unit of cloth to bring a certain amount of satisfaction to its saver is much less certain than the capacity of a unit of money. The value of cloth owing to increased production or decreased demand may go down more easily than the value of a unit of money. As a store of value, therefore, a unit of money has promises of more stable satisfaction than other goods. Though serious fluctuations in prices, which we have all been a witness to in these past two decades, do not make us very hopeful of such promises, money still continues to be thought of as possessing more stability of value than other articles.

To sum up then the chief functions of money,

“Money is a matter of functions four,

A medium , a measure , a standard, a store.”

Classification of money. Money, however, has great many varieties. We shall now attempt a classification of the various types of money which are commonly used. Two classifications are more outstanding and we shall consider them

here. One is that which is given by Keynes in the first volume of his famous "Treatise"; the other is Prof. Robertson's. For reasons of clarity, Robertson's classification, it will be seen, is preferable to Keynes's.

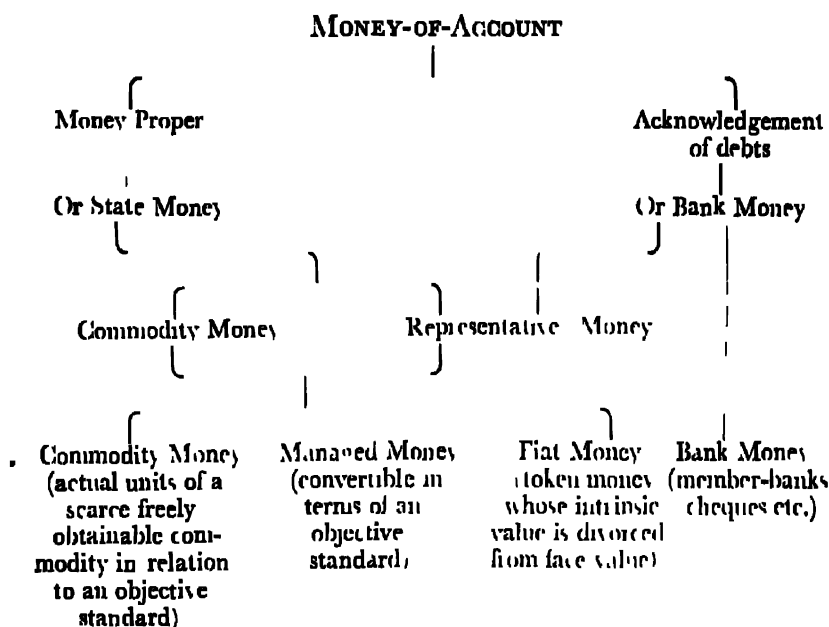
Before proceeding to give his classification, Keynes makes a subtle difference between money and money of account. Money of account is that, he says, in which debts, prices and general purchasing power are *expressed*. Money is that by giving which debts, prices etc. are *discharged*; in which general purchasing power is *held*. To clarify it further, he says, "Money of account is the *description* or *title* and money is the *thing* which answers to that description". Thus rupee described as containing so many grains of silver is a money of account but rupee the coin which answers to that description is money. It is the duty of the state to see whether or not a thing which goes by the name of money does correspond to the description of the money of account.

Money is now classified into chief varieties: one is what he calls money proper and the other bank-money. "Bank-money" he says, "is simply an acknowledgement of a private debt, expressed in the money of account (a cheque expressing demand of say hundred in rupees from a bank) which is used by passing from one hand to another, alternatively with money-proper, to settle a transaction". Money-proper is the money issued by the State and hence is also called State-money. In State money Keynes includes not only compulsory legal tender but Bank Notes and Central Bank Deposits also. Bank-money is mainly composed of member bank deposits.

As we shall see, we would then be eventually left with four varieties of money with which to do our exchange transactions. Three of these varieties, viz., commodity money, managed money and fiat money belong to the class of money-proper and one, viz., Bank money belongs to the Acknowledgement of Debts. The total amount of current money held by the public comprises all these varieties.

Prof. Robertson's classification. Prof. Robertson's classification is more elaborate. He classifies money into chief

The following is the chart of Keynes's classification :—



varieties as does Keynes. Money, he says, is either common money or bank-money. The latter variety, we can see, is a part of Keynes's classification also. But the former variety is differently named by Keynes. He calls it money-proper instead of common money. Common money according to Robertson is "money which is universally acceptable within a given political area." Bank money is that "which requires special knowledge and the making of special arrangements on the part of the recipient."

Common money is further classified by Robertson into three varieties—optional money, subsidiary money and legal tender money. "Full legal tender money or as we call it for short, legal tender" he says is that money "which is certified by law to be valid in final discharge of a debt for any amount from one fellow citizen to another." Subsidiary money, he says, is so certified only for debts up to a limited small amount. Optional money is one which is not legally certified to any amount whatever.

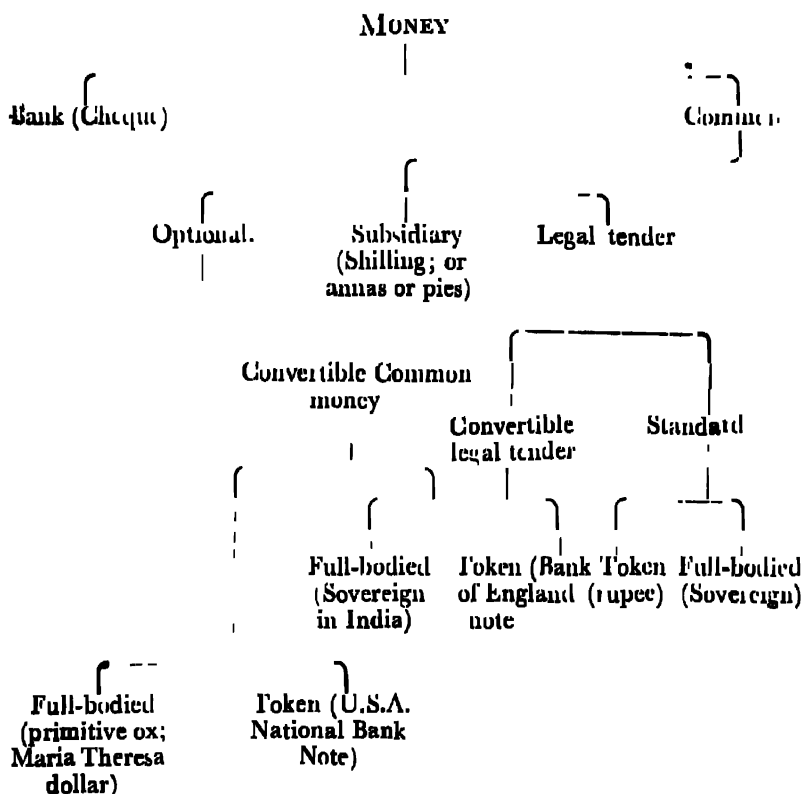
He sub-divides legal tender and optional money into further varieties. Legal tender is divided into convertible legal tender and standard legal standard. Convertible legal tender is that money "which one ordinary citizen must accept as final payment from another, but in exchange for which some central institution is bound to give some other kind of money if requested." Standard money is the one "in which even such a central institution is entitled to make a final and ultimate discharge of its obligations, including the obligation to convert convertible money." The two sub-varieties of optional common money are full bodied optional money and token optional money. Full bodied optional money is the one whose face value is equal to its intrinsic worth (like an ox) but the acceptability of which is not certified by the law of the land. Token optional money has a face value different from its intrinsic worth and, of course, no legal sanction behind its wide acceptability.

Legal tender money might be of two types as convertible legal tender money might be. These are token money and full bodied money. Token money, says Robertson, is money "whose value is naturally greater than the value of the stuff of which it is composed." Full bodied money is that "whose value is not naturally greater than that of its component stuff."

Prof. Robertson's classification which is given below is preferable to Keynes's for the varieties in his classification are not overlapping. A five rupee note, for example, would only be put in the variety of common convertible token legal tender money and in no other, though there are five other varieties along-side. In Keynes's classification, it can be put into two classes at the same time. It may belong to the fiat money class or the managed money class. If money is to be properly classified, the classification should be such that no single variety of money should appear as belonging to more than one class at a time. Or else we would say that the classes are over-lapping, the same thing being put in one and then another class at the same time.

Prof. Robertson's classification, moreover, is very elabo-

Prof. Robertson's classification :—



rate. Keynes recognises four varieties of money, whereas Robertson recognises seven. And we know what elaboration in classification leads us to. It makes possible a more thorough and scientific grading of classes and hence minimises the chance of the classes overlapping amongst themselves.

Yet another advantage which Robertson's classification possesses over Keynes's lies in its using a phraseology which is very much in consonance with the every day usage and hence more easily intelligible and clear. "Convertible legal tender" for example is much more easy to understand than "Representative money." "Token money" is much more attractive and clear in meaning to an ordinary man than "fiat money" and so on.

CHAPTER XLV

VALUE OF MONEY

We now address ourselves to a problem which has become perhaps the only topic of discussion in the midst of monetary theorists for some time past. This is the familiar problem of the value of money, technique of its measurement and its vital place in modern economy.

Significance of the functions of money. From looking at the functions which money is said to perform in a society, one might be tempted to conclude that money is unimportant for it is only a convenient tool for making exchanges and incurring debts. If this tool were not to be there, exchanges and debts would not cease to be made; they would continue to be made as in the past though only with difficulties. And so money has no independent identity to be capable of exerting some influence of importance on the working of men's economy. The classical economists took this view of the matter and that is why to them the problem of the value of money did not assume any vital importance. But to the monetary theorists of today who have witnessed the wide fluctuations in the economic conditions of the people as a result of changes in the value of money, the problem is no more of a trivial importance. Money to them is much more than a mere tool used for the convenience of the people- it is something of which men themselves seem to be becoming a tool with the advance of time. In such a situation, the view expressed by J. S. Mill that "there cannot be intrinsically a more insignificant thing, in the economy of society, than money" is wholly unacceptable.

If money could perform its functions smoothly in the economy of a society we would have called it "insignificant"; we would have considered it as of no more or no less importance than is given to any technique or tool that saves the labour of man. But that unfortunately is not the case. When money gets out of order it exerts a vital and sometimes a terrible influence on the working of men's economy. Mill recognises this fact when he says: "Like

other types of machinery it (money) only exerts a distinct and independent influence of its own when it gets out of order." But Mill was not conscious of any frequent and terrible disorders in the machine to call it significant.

The significance of money emerges from the fact that it functions with great leaps in its value, or which is the same thing, its purchasing power is seldom constant. The reasons why this happens will be seen in the theory of the value of money which we will take up in a subsequent chapter. Meanwhile we digress a bit to find out how this inconstancy in the purchasing power of money or the value of money is measured. But even before that let us examine the meaning of the phrase "value of money".

Meaning of value of money. When we speak of the value of a pen, we mean that it will command for the pen seller an amount, say, of a couple of rupees in such and such a market at such and such a time. When we speak of the value of a rupee instead of meaning that it will command one rupee in exchange for itself for that is meaningless, we would mean that it would command so much of milk or butter or a bus ride to the country side in a certain market at a certain period of time. By value of money is, therefore, meant the purchasing power of money—the capacity of a unit of money to command goods and services in exchange for itself. If prices are low, a unit of money will command more goods and services; if prices are high, the same unit will command less goods and services. And so, the value of money is related to prices. When the general price-level is high the value of money is low; when the general price-level is low, the value of money is high

We come next to the question of measuring the value of money. Since the value of money refers to its purchasing power and since the purchasing power of money in a given situation depends upon the goods and services which a unit of money will buy, the value of money can be found only by reference to the price of these goods and services. But these goods and services, naturally enough, have different prices. For purposes of measuring the value

of money we need a single price—many prices would mean confusion; a rupee purchasing more wheat and less cloth would be more valuable if the price of wheat alone was looked to and less valuable if price of cloth alone was considered. We cannot make a general statement whether the value of money has gone up or gone down unless we have a single price.

The technique of index numbers. To do that, says Keynes, we find out the price of a composite commodity. This composite commodity is a mere collection of all those commodities which a society buys for consumption—wheat, cloth, fuel, etc. and the like—at any time. We add up the individual prices of these commodities and find out their average. This will naturally result in a single price in terms of a change in which we can reckon the change in the value of money also. Of course this average will vary according to the type of average that is used. If the average is the geometric one, there will be one single price; if the average is the harmonic one there will be another single price; if the average is the arithmetic one there will be a third single price. Usually, however, the arithmetic average is employed.)

But even with the arithmetic average only, we can get a number of average prices for the same composite commodity. If we regard each commodity as equally important, then merely adding up the individual prices and dividing them by their total number would do. But we may regard individual commodities inside a composite commodity as more important or less important than others in which case then the average price of the composite commodity will be quite different from the above. When in a composite commodity which contains two individual commodities say, one is twice more important than the other is, the average price will be calculated in the following and not in the earlier manner. We shall multiply the price of the more important commodity by 2 and the price of the other commodity by 1, add up these prices and divide them by 3 to get the average. If both these commodities would have been equally important, prices need not have been multiplied and their total should not have been divided by 3; it should only have been divided by 2 to get the average. Thus unequal importance

of commodities leads to the calculation of a different average price, even though the type of average employed is the same. When commodities are unequally important, their prices before being added up are to be multiplied by their respective weights of importance. Further their total is to be divided by the sum total of the weights of importance and not by the total of the prices individually set down. Thus far, however, we have been talking of the value of money at one particular point of time.

For measuring changes from time to time in the value of money we calculate for each time a price level or an average price pertaining to the composite commodity (with its weights of importance) that happens to be the target of consumption at the time selected for purposes of comparison. When such a series of price-levels has been collected at one place, we call it by the name of index numbers. Index numbers are, therefore, a series of price-levels calculated from time to time for the *same* composite commodity for purposes of ascertaining the changes in the value of money. It should be evident why the composite commodity should necessarily be the same. If you want to know the changes in the price of *A* for two years, then you will naturally compare *A*'s price in one with *A*'s price in the other year. The comparison of *A*'s price in one year with *B*'s price in another is, in a way, completely meaningless.

The year with reference to which we measure changes in the price-level and hence the changes in the value of money is called the base year. If we wish to compare the value of money today with that in 1939, then 1939 would be the base year in our index-number. The prices in the base year would be taken as 100 and all the prices today would be expressed as a percentage of the base year prices. If wheat—the same quality one—were being sold at Rs. 3 a maund in 1939 and at Rs. 12 a maund today, then its price in 1939 would be 100, and today 400.

Difficulties of constructing index numbers. It would be well to indicate some of the things which should be kept in mind while constructing the index numbers.

The first thing is the choice of the base year itself. The selection of a year as base which fell in abnormal times—times of depression or boom—would lead us to misleading results. If prices today are compared to those prevailing in the boom period of the middle thirties, they might appear as having only slightly increased. And we would say that money has not become really as cheap as it appears when we compare its purchasing power to that in 1939. For a correct understanding of the fluctuations in the value of money a normal base year, neither of boom nor of depression but the one lying between both, should be chosen.

The selection of such a normal year is, however, a difficult task. For, we cannot easily say when it is a boom, a depression or a normal period.

Theoretically speaking, the best price level is that which happens to be the average price of all such commodities as form part of the composite commodity. But it is in practice difficult to include all commodities of consumption in a society; they are so numerous and even within themselves so varying in quality that we cannot possibly include all of them. Thus the necessity is forced upon us of including only as many commodities as possible consistent with the fact of their being widely consumed at the same time. If commodities are included which are not more or less universally consumed in the society, the price level thus calculated would be of no use though it would be indicative of the condition of those particular people who use those commodities. Our eyes should be on the society as a whole rather than on a section of its people.

A further thing that should be kept in mind is the type of prices collected for calculation. If wholesale prices are averaged the result would be different from that which we would get if retail prices were to be averaged instead. For, retail prices are generally different from the wholesale prices. To know what a unit of money will buy to X , we must, if we are to be accurate, take into account the price that X actually pays in the market and this price in

an overwhelming number of cases is the retail price and not the wholesale one. To know what a unit of money will buy to the society we should therefore know the retail price of commodities which the members of the society actually pay as *X* does, in their everyday consumption.

But retail prices are difficult to collect. And even if they can be collected somehow, so varied are they in most cases that we do not know which single one of them to choose for purposes of totalling and averaging. The wholesale prices are quite often uniform throughout the society or at least they are more uniform than the retail prices. Moreover they are easy to collect. We can approach big centres of trade where bulk purchases take place and know the wholesale prices much more easily than we can know the retail prices. But wholesale price index numbers are, by nature, less accurate for measuring money value than the retail price ones.

Yet another thing that affects accuracy of price levels is the method of averaging. The most commonly employed method is that of simple arithmetic averaging in which prices are totalled up and then divided by the number of articles. The geometric average is obtained by multiplying the prices and then extracting their root to the same number which articles of the composite commodity add up to. The harmonic average is obtained by adding up the reciprocals of the individual prices, dividing the total by the number of articles and then finding out the reciprocal of the final result again. If there are two numbers a and b , $\frac{a+b}{2}$ will be the arithmetic average, \sqrt{ab} will be the geometric average and $\frac{2ab}{a+b}$ the harmonic one. This last one is obtained in this way: we first add up the reciprocals of a and b i.e. $1/a$ and $1/b$ which gives us $\frac{a+b}{ab}$; then we divide it by 2 (which is the number of articles) getting $\frac{a+b}{2ab}$ as the final result. We now take the reciprocal and it becomes

$\frac{2ab}{a+b}$ which is the average that we referred to above.

The geometric average often times leads us to greater accuracy but it is difficult to use. And so the arithmetic average is generally in vogue.

As to the consideration of weights of importance we have already seen it to be indispensable for purposes of calculating a realistic measure of the purchasing power of money. Index numbers calculated without "weighing" are an unrealistic tool for measuring money value.

All the time that we spoke about index numbers till now we were referring to those which indicated average price of a composite commodity consumed by the entire society. We can frame index numbers for different sections of the society also. The procedure would be the same; only - and that is evident enough—that the average prices indicated in such index numbers would be no direct tools for measuring the value of money to the society as a whole. Such sectional valuation of money is obviously easier than the valuation for the entire society. Often times such a valuation becomes necessary also as for example when the problem concerns the raising or lowering of wages of the working classes.

Different varieties of index numbers. Index numbers can be of different varieties, according to the purpose for which they are framed. If they are required to measure the value of money from the entire society's point of view i.e. to measure the general purchasing power of money then we will have to frame the index numbers of a composite commodity embodying all social consumption. If we want for working classes we will have working class index numbers. If we want them for assessing the labourer's wage per hour, we will have the earnings standard. If we want them to indicate changes in the wholesale prices of certain staple commodities, we will have wholesale index-numbers. If the object is to stabilise prices then a tabular standard comprising wholesale prices of chief commodities might be formed. And so on, the variety

of index-numbers depending upon the object for which they are being framed. It is obvious that all these various types of index numbers would differ from one another in their results, for all of them would be based on different composite commodities with different weights and prices.

EFFECTS OF CHANGES IN THE VALUE OF MONEY

When a unit of money buys less or more, all the members of the society either lose or gain and to the same degree together. But this state of affairs is evident when each individual price has gone up or down simultaneously with all other prices. Normally what happens is however different. Some prices rise more than others or fall more rapidly with the very obvious result that some gain more or lose more than many other people in the same society. It is worthwhile indicating the effects of price changes on the respective gains and losses of the various members of a society. These gains or losses might result from shifts in the real wealth and income of the people, and from fluctuations in the volume of employment and production owing to price changes. We shall therefore, study the effect of changes in the value of money on (1) the distribution of real wealth and income and (2) the volume of employment and production.

We take up the effects on the distribution of real wealth and income first. These effects are attached to (a) debts incurred in money and also (b) the various types of money incomes that the members of the society earn. When prices rise relative to a certain period of time, then he who is repaid his debts contracted in the earlier period is a loser in so far as the amount which he gets back purchases a smaller quantity of goods and services than it used to do before. If *X* who had lent out a sum of Rs. 100 in 1939 to *Y*, gets back hundred rupees today he would be able to purchase much less with those hundred rupees owing to the prices being high at this time relative to those in 1939. And so *X* would be a loser. But *Y* will not be. In terms of goods and services *Y* pays much less in 100 rupees today than what he had got from Rs. 100 in 1939. When prices rise, creditors of the period when there was no such rise, lose but debtors

gain. The opposite happens when prices fall. For the creditors receive more purchasing power than they had lent out while the debtors pay more purchasing power than they had received at the time of borrowing their debts.

In the case of those whose incomes are almost constant or do not change very frequently, a rise of price means a loss, while a fall of price means a gain. Take, for example, interest, rent, pensions, annuities, salaries of public servants and to a small extent salaries and wage rates of workers in private industry. These do not fluctuate widely. And hence the obvious result that when the value of money has gone down, their money income being the same, the amount of purchasing power in their hands or their income in real terms goes down correspondingly and they stand to lose. But the receivers of profits of enterprise are not losers to a similar extent. In fact, they might even be gainers on the contrary. For, when prices rise their money incomes from profits also generally rise and so the net aggregate of purchasing power in their hands might actually increase. In periods of rising prices, therefore, the real income of capitalists, landlords and public servants generally goes down and they lose but the real income of entrepreneurs goes up or remains constant and they do not lose.

More far reaching and serious are the effects of price changes on the volume of employment and production in the society. These effects are to be studied through the behaviour of those who are responsible for production viz., the enterprisers. They open more factories, use more factors and raw materials, employ more people and produce more goods and services. And society to this extent gains in real income. When prospects of profit are negative or zero, factories are closed down, factors are left idling, labourers are dismissed, production declines. And society to this extent is a loser in its real income.

Profits being the difference between the income and cost of the entrepreneurs, they would be high when income is high but costs are low, they would be low when income is low but costs are high. When costs are higher

than income, losses begin to accrue to the entrepreneurs. In a period of rising prices, we have seen that interest, rent etc., are almost constant whereas enterprisers' income increases a good deal. And so the profits of the entrepreneurs have a tendency to increase. The result is increased employment and production and hence increased real income to the society. In a period of falling prices, the opposite thing happens. The income of the entrepreneurs decreases with poorer prospects of profits with the result that factories begin to be closed down and labourers are dismissed, unemployment gets rampant, incomes of those who were employed just a while ago vanish, demand of goods decreases. And even those goods which are being currently produced (what to say of those that have already been produced) have to lie idle and unsold. Often times even the landlords and the capitalists who, we saw above, are gainers under a price decline have to lose in so far as the enterprisers under stress of heavy losses and bankruptcy have to refuse payments to these people.

The violent upheavals that are often caused in a society's economy as a result of price changes quite often persuade us to believe that it would be better for the sake of a steady economic life that the value of money was kept as constant as possible. The industrial conflicts that emerge, when entrepreneurs' incomes rise but the labourers are paid the same old amounts, bring about a moral degradation of the people sometimes and at others they create conditions which might help to bring down the existing economic structure of the society itself.

The growing demand of the people for their own government to assume greater and greater responsibilities for economic affairs, is to no mean an extent associated with this situation. Lack of coordination in the activities of enterprisers leads to a chaotic movement of money incomes and prices and brings all such situations to pass. When the government takes up greater economic functions itself the chaos would have been minimised or at any rate brought down a bit. This, at least, is one of the opinions and a vital opinion also in the debating over fluctuating prices.

VALUE OF MONEY (*Continued*)

THE QUANTITY THEORY OF MONEY

*Historical background**. Economists for a long time past have been conscious of some relationship between money on the one side and prices of goods and services on the other. Of what nature this relationship is they are yet not completely agreed about. But a majority of economists of whom Fisher is the chief, has held the view that this relationship is such that when the quantity of money in circulation is increased other things remaining the same the value of money decreases or when the quantity of money in circulation is decreased, other things remaining the same the value of money increases. This is what is commonly described as the quantity theory of money.

The earlier and cruder forms of the quantity theory did not recognise the importance of the fact of money circulation. To them quantity of money in itself was a sufficient determinant of the price level. If this quantity increased prices went down; if it decreased prices went up and so on. But soon it came to be realised that prices would be determined by money that circulates rather than by money that is underground. Mill said, "If the whole money in circulation was doubled prices would be doubled. If it was only increased one-fourth, prices would rise one-fourth." Thus recognition of the fact of money circulation gradually emerged till it has come to be almost indispensable today in the explanations of the modern version of the quantity theory.

The reason why the fact of circulation of money is important is obvious enough. If one unit of money passes hands ten times it would increase demand for goods by the same number. As soon as a rupee is got want is felt to spend it on something. And every time that this rupee goes into a hand

* This analysis follows Prof. Chandler's analysis in his book entitled 'Introduction to Monetary Theory'.

every time such a want arises so that a person who gets this rupee ten times feels ten times the demand that he would feel if he got this rupee once only. This increase in demand is in evidence when the same rupee passes on between ten persons. For then each one feels a demand to the extent of a rupee and so the total demand becomes ten times that which would have been felt had the rupee remained with the same person only. This increase in demand naturally affects prices. And so the fact of circulation of money—the number of times that it passes hands cannot be neglected.

The modern version of the quantity theory of money is, therefore, based on three factors; (a) the quantity of money (b) the number of times money circulates or which is the same thing the velocity of circulation of money and (c) the amount of goods and services that are to be bought and sold in the market. It must be remembered that the modern version of the quantity theory of money does not state that price level changes with changes in the quantity of money only; it may change with changes in velocity of circulation or with changes in both quantity and velocity at the same time.

What now is this modern version? Two approaches have been made under the same label—the quantity theory—for explaining money value. They are (1) Transactions Approach and the (2) Cash Balance Approach. We have thus two varieties of the modern version of the quantity theory of money, one known as the Transactions type of quantity theory and the other the Cash-balance type.

We take up the Transactions type of the quantity theory first. According to this type, value of money changes, other things remaining the same, with changes in the cash transactions of the people. If the cash transactions of society rise, value of money goes down, the price level goes up; money purchases less goods and services than before. The opposite happens when cash transactions have gone down.

Cash transactions refer to the purchases that are done with the help of cash or money. Suppose that some

society happens to possess five units of money only. And each unit of money passes hands ten times, so that it can help men to do ten transactions. Then the total cash transactions in the society would be $5 \times 10 = 50$, and it is with these that society would purchase its total goods and services. It is obvious enough that the income of the society from the sale of its goods and services must be the same which men of that society offer in the purchase of them. And so 50 should be the total income from the sale of the society's goods and services also. But this can be so when the average price of unit of the goods and services sold or traded is such that when it is multiplied by the total unit of goods and services the result is 50. Or else sale proceeds would be different from what people have actually offered for the sales.

Put in a generalised form, if at any given time a society possesses on the average M units of money, and V is the average velocity of circulation of each unit, so that MV represents total cash transactions; also again if T is the total volume of society's goods and services traded in exchange for society's cash transactions with P as the average price per unit of T , then we would say that $MV = PT$ in that society at that time. This is what monetary theorists call an equation of exchange. It is with the help of this equation that they explain the quantity theory of money. In the long run, they say, an increase in the quantity of money causes an almost proportional increase in the price level. In the short run changes may not be proportional.

Let us, for a moment, digress to analyse the various factors that might cause fluctuations in M , V and T at any time or which is the same thing let us see the factors on which M , V and T depend.

M constituted of cash and bank deposits subject to check depends upon the following chief factors:—

1. The size of monetary base:

- (a) the size of the monetary gold stock;

- (b) the amount of coins and paper money issued by the Government.
2. The community's choice as to the relative amounts of cash and of checking deposit that it wishes to hold.
3. The height of the ratio between bank reserves and checking deposits.

Monetary base is the fund out of which cash emerges either for circulation or for serving as a reserve against which notes or token money might be issued. It should be clear of itself that if this monetary base increases, quantity of money would also increase and vice versa. The most common form of monetary base is gold the stock of which inside a country depends on the country's internal production of it and the position of export of gold. If gold stock is sufficient more cash in the form of standard and token money including notes would be available for circulation.

The next factor determining the quantity of money is the decision of the community itself as to how much Government money and how much bank money would it like to hold. If the community has decided to hold more money there would be quite often, a condition of inflation; if it has decided, to hold less money the quantity of money would go down.

A third factor affecting the quantity of money available is the ratio of bank reserves to bank deposits. This factor has a potent influence on the supply of bank money. Each bank, every where, is asked that if its reserve requirements are X then it should not open deposits of more than a certain multiple of X . It might be asked, for example, that if 20 is what it is required to keep as reserve, then it should not open deposits above hundred, which is five times its reserve requirements. And so on. This can easily show that banks are prevented from opening limitless deposits and hence from issuing excessive amounts of bank money to the public. The temptation to offer loans at the time of brisk business might lead the bank to issue such excessive amounts; the

ratio between reserves and maximum deposits serves as a check upon this temptation. For then they cannot issue money beyond that limit where this ratio has been achieved. The banks are, however, free to issue money below this ratio. Just what ratio there should exactly be between a bank's reserve requirements and its deposits, depends upon what the law or custom wants it to be.

Next we come to V . V depends upon the following chief factors : —

- (1) The stage of development of credit, and financial system and the community's use of it.
- (2) The community's habit as to saving and consuming its income.
- (3) The conditions of payments in the community.
- (4) The means of transport, and
- (5) Population.

A community with a good banking and credit system would be using money more freely than a community with no such system. There would not be any such fear that if all money is spent loans would not be available. And velocity of circulation of money would be naturally high. But the mere existence, however, of an advanced system of credit would not of itself increase velocity unless people make frequent use of the system.

Velocity of circulation of money also depends to a considerable extent on the fact whether the community is thrifty and wants to save more or would spend a greater part of its income on consumption. Naturally enough, if people want to save more, they would not easily part with money, money would pass hands less frequently and its velocity of circulation would go down. The reverse will happen when people will be willing to consume more and hence easily part with money and money would pass hands more frequently.

Also important in connection with this velocity is the system of payments in the community. If payments are made regularly, people will spend money more freely than if they are paid in an irregular manner. If a labourer is not sure of whether he would get his next wages after a week or a month, he would naturally like to spend money with great caution but if he is sure of his payment after a week or a month, he may not be as cautious. And then the velocity of circulation of money owing to free expenditures would naturally increase. Again if the labourer, even when paid regularly, gets wages on a monthly basis, his expenditures would not be as frequent as they would be if he is paid on a weekly basis only. The more frequent the payment, the more frequent the expenditure and hence the greater the velocity of the circulation of money.

Velocity of circulation of money would be affected by means of transportation also. If a coin reaches Bombay, Calcutta and Madras, it would pass greater number of hands than if it reached Bombay only, assuming for a moment that each of these cities has the same volume of business population. Thus velocity of circulation of a unit of money depends upon the ease with which it can travel throughout the community.

Population affects velocity in the sense that if a greater number of people be there, money would pass more hands than if the number is small. A greater population would increase the velocity of circulation of money; a smaller population would tend to decrease it.

Next we come to the factors behind T . T depends on the following chief factors:—

- (1) Population and the natural resources of the community.
- (2) The extent to which the factors of production happen to be employed.
- (3) The business structure of the community.
- (4) The extent of barter.

If population is great, manpower would be great and with an adequate amount of natural resources, it would be possible for the community to maintain a fairly high degree of the production of goods and services. The reverse will happen if the population is small and the natural resources too are insufficient. The natural resources here also include the amount of capital equipment and the state of technical knowledge in the community.

The chances for the physical volume of trade in goods and services being great or small depend also upon the limit to which the factors of production already happen to have been used. If a large amount of factors is yet lying idle, T will increase rapidly; if only few of them are available for production, T will increase but slightly and so on.

The total volume of traded goods would be greater if there is large number of traders rather than if there is not. And this depends upon the structure of business in the community. If the business is in the hands of a few monopolists, there will naturally be fewer traders and hence smaller trade; if business is spread up between a large number of people, T will generally expand.

This digression has helped us to look into those ultimate factors on which changes in price level actually depend. M is only a superficial factor, useful in so far as it condenses in a representative form all those factors on which it itself ultimately depends.

The quantity theory maintains that in the long run when all adjustments have been made, price level changes in proportion to changes in the quantity of money. If the quantity of money is doubled, price-level would be doubled, if the quantity of money is halved, price level would be halved and so on. This happens because in the long run, V and T in our equation $MV=PT$ are independent of changes in the quantity of money. As we saw above they are mostly determined by factors which have nothing to do with the changes in the quantity of money at all. Naturally then when M becomes $2M$, V and T remaining unaffected, P must become $2P$ in order that this equation might hold good i.e.,

when M —the quantity of money—is doubled, P the average price of a unit of T , the total goods and services must become double too.

But this analysis holds good for the long period only—a period in which all adjustments of short period fluctuations have finally settled down. In fact even in the long period sometimes V and T might permanently change owing to violent fluctuations in them in the short period, caused by changes in the money supply. But roughly speaking, it might hold good in the long period that V and T are mostly independent of money supply.

As said above the modern version of the quantity theory does not deny the possibility of price level changing in greater or smaller proportion to the changes in the quantity of money in the short periods. We shall now see how these non-proportional changes take place.

Let us first see what happens when the quantity of money is increased. Assume that the members of society after weighing a number of considerations had decided to have X amount of money with them. Now when money increases beyond X , they have more money than they want, and they would naturally like to spend it. The demand for goods would increase; so will increase the prices of them. Also when people are willing to spend money freely velocity of circulation increases. As prices increase, opinion grows that profits would increase and some people will spend money still more freely adding more to the velocity of circulation. Here on this side consumers fearing that prices might rise still further begin to purchase things for hoarding, thereby increasing their expenditures and with them the velocity of money circulation also. An increase in the quantity of money, we can see, thus, might cause an enormous increase in the velocity of circulation. The total of cash transactions also rises enormously owing to the increase in velocity.

But whether this would cause a proportional increase in price level depends upon the movement of T i. e. the total volume of trade done with those cash transactions. If T

rises just as much as cash transactions have risen, the price-rise would be proportional; otherwise it would be non-proportional. The extent of the rise of T depends upon the amount of factors unemployed at the time the cash transactions are shooting up owing to the enormous increase in the velocity of circulation. If a large number of idle factors exists, T might increase more rapidly than V ; and the increase in price would be lower than the increase in M . If less idle factors exist, T might increase less rapidly than V and the increase in price would be higher than the increase in M . The relation between T and the unemployed factors is obvious enough. Unless there are factors to produce, how can production increase? And unless there is increased production how can the total trade of goods and services increase?

There is thus no automatic relationship between the increase of M and the increase of prices in the short period. Prices may increase in a smaller proportion in the beginning when T increases more rapidly than V owing to the availability of unemployed factors. And they may increase in a greater proportion later when T rises less rapidly than V owing to a smaller availability of factors, a great part of them having been used up in the beginning of the trade expansion. The recognition of the importance of V in the short period is indispensable for price explanation. Once an increase has been effected in the quantity of money, these are the relative rates of increase in V and T that help to determine the price level in the short-period.

When the quantity of money is decreased rather than increased the opposite process begins to work in the short period. Members of the community feel that they have less amount than X and they should sell more to increase their income and hence X . When supply of goods and services increases, demand remaining the same, prices begin to go down. Producers are not willing to spend money on further production. Consumers hold back their expenditures in expectation of further price decline. And so the velocity of circulation begins to go down. With every decrease in price there is a setback in this velocity and prices decline

further. The total cash transactions dwindle in amount, at first slowly but later fast.

The exact decline of prices would depend upon the relative movements, once M has been decreased by a certain amount, of V and T . If T increases faster than V , price decline would be less than proportional to the decline in M ; if T increases more slowly, it would be more than proportional to the decline in M .

The Cash-balance type of quantity theory, the other approach to the price problem, connects the value of money to the supply of and the demand for cash-balance in the community. This cash-balance is nothing but the quantity of money demanded by the members of the community for purposes of making their purchases over a certain period of time. This cash balance is only another name for the quantity of money. And demand for and the supply of cash balance means the same thing as the demand for and the supply of money. Value of money, say the theorists here, is determined by the supply of and the demand for money.

It is an obvious fact that the demand for money has a meaning behind it only when we want to purchase goods and services with it. Money for its own sake is never demanded. And so the demand for money translates itself ultimately into a demand for goods and services that the community would be purchasing with the demanded money. Once the amount of goods and services that the community wants to hold has been decided, the demand for money would total up to that much amount which can help the community to purchase the decided amount of goods and services. If the community wants X goods and services, its demand would be for that amount of money which would buy this X . When prices rise and money becomes weaker in its purchasing power, more money would be demanded to purchase X than before. When prices fall and money becomes stronger in its purchasing power, less money would be demanded to purchase X than before. The demand for money varies with the price level.

Here, however, price level was the cause and demand for money the effect. We have to proceed in such a manner that the demand for money becomes the cause of price changes. Here we take then the changes in the demand for money independent of the price level and then study the effect of these changes on prices.

Demand for money may change for any of these two reasons or both. It may change (i) owing to changes in the trade of goods, services and securities per unit of time or (ii) owing to changes in the length of time for which the community demands money for making its purchases. The greater the volume of goods to be traded, the greater, other things remaining the same, would be the demand for money. Also the greater the period of time for which the community wants to hold its money the greater will be its demand for it. A community which wants to spend money on a month to month basis would be demanding less money than one which wants to spend money on a two-monthly basis. It should be evident that when money is demanded to be spent on a month to month basis, the expenditures would be more frequent and hence the velocity of circulation of money greater than when money is demanded on a two-monthly basis. Assuming K to be the period for which money is demanded, the greater is K , the smaller is V and vice versa. Also the greater is K , the greater is the demand for money. The demand for money varies directly, whereas the velocity of circulation of money varies inversely, with K .

Suppose now that M is the total quantity of money supply in the society, P the average price per unit of T , the total trade in goods and services per year and K the length of time for which money is demanded. Then PT would represent demand for money for an entire year and $PT \cdot K$ or PTK would represent the demand for money for the period K (K being expressed in terms of years. Generally, however, K is only a small fraction being equal to a few weeks or months of a year). The supply of money is M ; the demand for money is PTK . The value of money at the point of equilibrium would be such as to equate supply and demand.

And so at the point of equilibrium

$$M = PKT$$

Price P may change either because of a change in M or in KT . KT represents the goods and services for which the community in question demands money for a period K . The demand for money would vary directly with KT . Thus KT is an indication of the behaviour of the demand for money in the community. Price, thus, may change either with a change in the demand for money or in the supply of it, with a change in KT or M .

We saw above that when K increases, V decreases and vice versa. We can, therefore, say that $K = 1/V$. If we substitute $1/V$ for K in the above equation we get

$$M = P \cdot 1/V \cdot T$$

$$\text{or } MV = PT$$

which is the same equation as the transactions type of quantity theory uses for its analysis. This is one of the many proofs that show that both the transactions as well as the cash balance types of the quantity theory talk of the same thing under different labels.

Now we take up a slight elaboration of the cash-balance theory. We take up the effect of supply of money first. When supply of money increases members of the community feel that they have more cash-balances than their demand for them (we begin from a position of equilibrium where supply of money = the demand for money). And they begin to spend money more freely; their demand for goods increases; prices rise till when the value of money has gone down, the community begins to demand more money for the same amount of goods and services than before. The increase in money supply thus causes an increase in money demand also till both have become equal once again.

When money supply is decreased, members of the community feel that they have a smaller amount of money with them

than they want. And so they begin economising their expenditures; their demands for many goods and the prices of those goods begin to show a downward trend. This increases the value of money, for the same amount of goods and services the community needs less money than before. And so the demand for money decreases till it becomes equal to the decreased money supply.

But in both the cases referred to above, if the demand for money, for any reason whatever does not change with changes in money supply, then price changes would be proportional to the money supply changes only.

To come to the changes in the demand side when demand for money goes down because of changes either in T or in K , the community feels that it has a surplus over the present supply which it should use up in purchasing goods and services; the expenditures of the people go up and prices rise till the purchasing power of the existing money supply is lowered to the level demanded by the community. The increase in the price level we might observe here should be proportional to the decrease in the demand for money, otherwise the same supply of money as before would purchase less or more amount of goods than the community demands. And at the point of equilibrium such a situation is impossible. In the interest of equilibrium, therefore, when the supply of money does not change price increases or decreases must be proportional to the decreases or increases in the demand for money. We give no separate treatment to what would happen when demand for money increases for it is just the opposite of the earlier case.

All this happens in the long run. In periods of transition, however, prices may or may not be proportional to changes in the supply of or the demand for money. The extent of price changes will depend upon the relative movements of T and K (in the transactions type of quantity theory we saw that they depended upon the relative movements of M , T and V). Since $K = I/V$ here, the analysis given in case of the earlier theory would apply here too with only that much difference which the relationship between K and V implies by assumption.

The supporters of the cash-balance type of quantity

theory claim that their own explanation of the process by which money value is determined is superior to the cash transactions approach because of two chief reasons. One is that their theory is in harmony with the general theory of value which explains the determination of any value in Economics as a result of the interaction of the forces of supply and demand. The other reason lies in their connecting the problem of the valuation of money with the direct force of subjective valuation. Just what money would purchase does not depend on remote trade transactions but on the immediate decisions of human beings to have a certain amount of real income with them.

We may not dispute the claims of these supporters but we can frankly tell them that the substance of what they talk about is essentially the same as the one which the "cash transactions" theorists too talk about.

SAVING AND INVESTMENT THEORY

To a good number of modern monetary economists this way of approaching the problem of the value of money looks vague and unrealistic. What money buys does not depend upon the existence of a certain amount of cash or notes inside a society though that too may be a factor in the total situation, but upon what the members of that society get as their income and what respective amounts out of that income they spend in purchasing their goods and services. The value of money, they say, is a function of the twin factors of money income and money expenditure of the society.

The money income of a society in any period is defined as the money costs of production incurred by that society in that period in producing its goods and services. If a certain society A spends T amount in producing T goods and services in a period K , then T will be regarded as the money income of this society within the period of time K . The value of T goods and services would affect the money income of the period immediately beyond period K or any other period after that time, but it would not make any difference to the money income in period K in which T amount of goods and services have been produced.

Let us now see how this money income is disposed of. We assume that money income of the society *A* cannot be spent in the same period in which it is earned; it is spent in the succeeding period. And that is as it should be. So long as *T* is being produced, money costs in period *K* continue to be incurred and therefore the money income of that period continues to be earned by the society. It is only when the society has finished or say just finished producing *T* amount of goods and services that it can form a definite and exact idea of its aggregate costs of production or of its aggregate income. The idea of the disposal of its income can arise after the society has made itself sure of that income. Hence, it logically follows that money income of the period *K* can be disposed of only when that period is over. Earlier than that time there would be no surety with regard to the money income itself.

Now suppose that out of *T* amount of goods and services which the society has produced *T*₁ measures the total of consumption goods and services, and *T*₂ the total of production goods and services, so that *T*₁ plus *T*₂ equals *T*. If now *P*₁ happens to be the price of *T*₁, then *P*₁*T*₁ is the equal of what the society spends out of its income *Y* upon the purchase of *T*₁ consumption goods and services. Similarly, if *P*₂ happens to be the price of *T*₂, then *P*₂*T*₂ is the amount that the society spends out of its income *Y* on the purchase of *T*₂ production goods and services. Thus, the total amount that the society *A* spends upon the purchase of *T* goods and services, consumption and production, out of its income *Y* is equal to *P*₁*T*₁ plus *P*₂*T*₂. If one unit of *T* is priced at *P* in the market then *PT* is the measure of the total expenditure of the society in purchasing *T* goods and services. But since *P*₁*T*₁ plus *P*₂*T*₂ is also a measure of the same expenditure we would say that *PT* equals *P*₁*T*₁ plus *P*₂*T*₂.

Now, if *N* is the amount of money that is saved (these monetary economists define savings as that part of income which is not spent on consumption goods and services), then *Y* minus *N* is obviously the amount of money that is used up in purchasing consumers' goods and services. Hence.

$$PT = Y - N + P_2 T_2 \text{ or } P = \frac{Y}{T} + \frac{P_2 T_2}{T} - \frac{N}{T} \dots (a)$$

Since T is the money cost of producing T goods and services, T/T is evidently the cost per unit of T which is the same thing as cost per unit of output produced by the society in the period K .

We can see now from the equation (a) that when

$$N - P_2 T_2, \quad \frac{P_2 T_2}{T} - N = 0$$

so that $P = \frac{1}{T}$

When $N < P_2 T_2, \quad \frac{P_2 T_2}{T} - N > 0$ i.e., a positive quantity so that $P > \frac{1}{T}$.

And when $N > P_2 T_2, \quad \frac{P_2 T_2}{T} - N < 0$ i.e., negative, making $P < \frac{1}{T}$.

Now, $P_2 T_2$ is the amount spent on production goods and services and N is the amount that is saved. Substituting words for symbols in the above conclusions, if the entire amount saved equals the amount spent on producers' goods and services, the price per unit of T equals the cost per unit of T . There will be no profit or loss and production will be in equilibrium. If the whole amount that is saved is not used up in purchasing producers' goods and services but only a part, then, the amount spent on producers' goods and services will be less than the total amount saved. The price per unit of T will be less than the cost per unit and there will be losses. The output will have a tendency to contract, till costs of production in succeeding periods have also gone down and the disparity between prices and costs has been gradually eliminated and equilibrium restored.

The reverse is the case when the society spends on production goods and services more than what it has been able to save. Price per unit of T will then be greater than the

cost per unit of T . There will be profits, output will have a tendency to expand till costs of production in succeeding periods have also risen and the disparity between prices and costs is gradually eliminated and equilibrium again restored. Calling the expenditure on producers' goods and services by the name of investment we can state our findings above as depending upon the relationship of savings of the community to its investments. When savings are equal to investment, equilibrium obtains, prices continue unchanged and the system moves smoothly. When the disparity between them comes in evidence disequilibrium begins, prices change and incomes or costs of production change too in the succeeding periods, letting loose forces tending to establish fresh equilibrium.

The value of money thus rests upon savings and investment which are both the outcome of and also the causative force behind the fluctuations in the money income of the people. In the periods of boom, investments outstrip savings and prices rise : the opposite happens in periods of depression.

The explanation offered by the Quantity Theorists that prices rise in proportion to the quantity of money applies chiefly to the long period analysis. Booms and depressions form short period economics. Despite a great quantity of money being there during a depression prices do not rise; for the velocity of money, perhaps, falls considerably.

The point however, is not whether Quantity Theory does not apply to a phenomenon which it was never its intention to explain. It is whether it makes statements which are in themselves wrong. And thus examined the quantity theory must come out triumphant; for prices do change in the long period in the same proportion in which the quantity of money has changed.

The modern theory may be right in its own statements regarding prices. But it is not right in being critical of the quantity theory of money on the score of its being inapplicable to all cases. What good is served by fencing with ghosts?

CHAPTER XLVII

GOLD STANDARD

Before we examine the important problem of the Gold Standard, let us consider coinage and the problem associated with it.

Under coinage we study the various methods by which the substance chosen as money is rendered into that form or shape which is easily recognisable by people as money. Or in other words, taking an example, it means how a rupee is so made to appear that it is generally recognised as a rupee.

The first problem that arises in coinage is to decide as to what should be the proportion of the precious metal in the alloy which is to compose the coin. There are two important practical reasons which make it very difficult to have coins made out of pure metal.

(a) It is chemically very difficult to produce pure metal. Even if this is obtained it will be at a very high cost, a circumstance which will entail other problems of considerable intricacy.

(b) An admixture of other baser metals is necessary to harden the coin, so that it could bear the rough handling of circulation. Besides a certain degree of hardness is essential to avoid abrasion of the coin (the loss of metal due to wear and tear in use) when in use.

Thus it seems necessary to alloy the pure metal with baser metals to produce the desired result. In what proportion the metals are to be compounded is a question which has to be decided. This will be done by the Government concerned, with reference to a series of circumstances that exist in the country. Once the proportion is fixed it is maintained until the Government desires that it should be changed.

The next question that arises in this connection concerns the expenses involved in the rendering of metals into coins.

The manufacture of the coins in the mint requires a certain amount of expenditure. This expenditure is defrayed by the Government. Thus the coins when ready should not only value the worth of the metal in it but also the expenditure incurred for manufacturing them. In order to defray these expenditures, therefore, some Governments take out a certain percentage of the gold or silver from the bullion (equal to the actual expenses incurred) before rendering them into coins, as a charge for the manufacture. This is called '*Brassage*'.

The other method followed is one in which the mint manufactures coins freely. This is called *gratuitous* coinage. The argument behind this is that like other services provided by the Government, for public benefit, this also should be provided on the account of the treasury of the Government.

Sometimes however, the Governments do not only charge for the expenses actually incurred in manufacturing coins, but a little more which is of the nature of a tax and is levied due to the monopoly held by the Government for manufacturing coins. This is called '*Seigniorage*'.

Gresham's Law

We have made reference before to the wear and tear of coins, due to what is technically called abrasion. After sometime of circulation, coins generally lose certain part of their weight because of constant rubbing against all kinds of rough surfaces. The result is that in comparison to new coins the old ones become underweight and therefore of less intrinsic value. Again if coins of two metals say gold and silver are circulating side by side and on account of some reasons the price of gold rises in comparison to silver, then if the fixed ratio between the price of silver and gold coins remains the same and do not change according to the change in the value of gold, the intrinsic worth of the gold coin becomes much more than is evidenced by the relation between the values of the two coins. In such conditions people are likely to hoard the more valuable coins or to employ it for some profitable purpose, either by melting it and then selling it or by some other kind of speculation. The result in any case is that the more valuable coin is driven out of circulation. Sir Thomas Gresham

at the end of the 16th century in England perceived this tendency, because at that time due to the debasement (i.e. lowering of the metal content of the coin) of the coin by Henry VIII and others, two types of coin were circulating at the same time. He studied the tendency and then propounded a law, which is now known as Gresham's Law. This law states that when two sorts of money are circulating together, the inferior will drive out and replace the better. An example of the application of this law could be easily taken from the early years of the World War II when all coins suddenly became scarce in India. On account of insecurity felt by the people caused by the presence of Japanese on our boundaries and the consequent fear that the Government might collapse, the value of paper money became much less in the minds of the people than that of coins which evidently possessed some intrinsic value. The result was that coins were extensively hoarded. Paper money which was being considered inferior drove the coins out of the market. One thing more has to be kept in mind about this law, and that is that the law has a greater tendency to operate when the currency available is in excess of what is really required by the level of production. In other words it is likely to apply more under conditions of inflation than under conditions of deflations. The reason for this is evident. In deflationary condition, any hoarding of money will deflate the currency further which in turn will depress the prices to a greater extent and thus bring about a fall in the general level of production as well as employment. This latter will therefore act as a check on any withholding of money. Under inflationary conditions on the other hand, any attempt at reducing the amount of currency in circulation will produce a desirable effect inasmuch as it will deflate the inflated prices.

Let us now turn to the examination of Gold Standard. Our first step in this direction must be to have a clear idea as to what is standard, or to be precise, what is a monetary standard.

Money is commonly defined as anything which is generally acceptable as a medium or means of exchange. We can easily pick holes in a definition of this nature, but for our present purpose we will consider it as broadly correct and accept-

able. In order to fulfil the purpose of a means of exchange a suitable commodity is generally chosen. When such a commodity is chosen and becomes generally acceptable by the people, who agree to use it as a common medium of exchange as well as measure of value, this commodity becomes the standard. Generally the commodity chosen has been a precious metal and the economists have gone so far as to imbibe a metallic currency with something of a moral principle as if honest dealing would be impossible without it. The metal chosen generally is either gold or silver. Most of the western nations chose gold, while countries in the East like China chose silver, as their standard. The most important, however, from an international point of view is the gold standard. We will now discuss what gold standard is and how does it work.

The gold standard basically is a device to maintain the stability of the exchange rates. Its foundation is the tying up of the value of the monetary unit with the value of gold by fixing the price of gold. Since gold is a commodity with a world market, it has a world value, and therefore a standard based on gold gives to the monetary units a world value. This in a nut-shell is the description of the gold standard, but we must go into further detail to comprehend its full significance.

We have said that the gold standard is a device to maintain the stability of exchange rates. This is likely to give us the notion that the gold standard was invented after considerable study for this purpose. As a matter of fact there are some enthusiastic supporters of the gold standard who would make us believe so. But, in reality, the gold standard was not invented by any body for any purpose. It grew naturally out of the historical evolution of money. Originally coins were the only currency and they were for practical reason composed of metals. In the course of time gold for some very good mechanical and chemical reasons became the dominant metal. Then after the lapse of some more time paper currency grew out of the metallic coins. The first step towards the modern complicated system was taken when paper currency, which was like I. O. Us of the bankers was made convertible into gold. This was necessary to inspire confidence in the currency. Afterwards, there was the gradual

evolution of bank deposits and cheques, which too in their original stages were fully convertible into gold again for the important purpose of making people feel confident about them. Originally bank-notes and bank deposits formed a small part of the total currency, but gradually they grew to form the bulk of the currency. But as long as gold coins and paper money circulated together, the latter was fully convertible into gold, for otherwise, it would have been tantamount to having two sets of money of different values circulating together. But since the time gold coins went out of circulation it is not *necessary* for bank-notes to be redeemable in gold. But it is as *possible* as ever as an unexercised right. Now most of the currencies of the world are constituted entirely (except for subsidiary coins) of paper money. When this paper money is made freely interchangeable with gold at fixed ratio by law, the currency is said to be on gold standard. But this device of making paper money convertible into gold at fixed ratio is not any one's invention, but the result of centuries of evolution.

Before going further, let us at this stage clarify the distinction between the different types of gold standards. There are the following types of gold standards :—

- (1) The Full Gold Standard
- (2) The Gold Bullion Standard
- (3) The Gold Exchange Standard.

Full Gold Standard :

These three types of gold standard have roughly marked the various stages in the evolution of the Gold Standard. In a system of currency where gold coins form the entire currency in circulation or where they circulate equally with notes, so that the latter are easily convertible into gold coins, the system is known as 'full gold standard'. This was the form of the gold standard in the first stage of its evolution to its modern form.

Gold Bullion Standard :

In the next stage, gold coins go out of circulation and

the entire currency is composed of Bank-notes and bank deposits. But the Central Bank under legal obligation is bound to convert all currency into gold at a fixed price and to an unlimited extent. The Bank cannot refuse to either buy or sell gold in exchange of currency, at a fixed rate, regardless of the quantity offered for sale or required to be purchased. When a system of this nature exists, it is called the "Gold Bullion Standard".

Gold Exchange Standard :

In this third stage in the development of the gold standard there is a further development in regard to the currency in circulation and gold. Here the Bank is not legally obliged to convert currency into gold, as it is bound to do under the Gold Bullion Standard. But it is still legally obliged to redeem the currency into some other currency which is convertible into gold. The country which adopts this system is generally poor or small. It usually designates the currency of some large gold standard country as the one in which its own currency will be convertible at a fixed rate. Anyone desirous of getting his notes redeemed in gold will first get it converted into the currency of that other country and then through it into gold. This system is known as the 'Gold Exchange Standard'.

As will be evident, there is one thing common to all these three forms, and that is the linkage with gold. Either the currency is directly linked with gold in volume or value or it is linked with it through some other currency. This character is therefore salient to any form of gold standard.

Functions of Gold Standard :

The gold standard has two functions :-

- (1) It is a method for controlling the volume of currency.
- (2) It is a device to preserve the stability of exchange rates.

In every country there are some Currency Laws. The

laws stipulate that notes can be issued only if there is a certain backing of gold held in reserve against them. There are various proportions which various countries fix in regard to the volume of gold to be held in reserve against them. There are various proportions which various countries fix in regard to the volume of gold to be held in reserve against the issue of notes. There are not only different proportions, but also different methods by which this relation is determined. For example, the British System differs from the American, in as much as the British provide for a fixed-fiduciary-issue system while the Americans follow a percentage-reserve system. In a fixed fiduciary-issue system a certain fixed amount of currency notes are allowed to be issued without any gold reserve, but any issue beyond that fixed amount has to be backed hundred percent by gold. Before the War broke out in 1939, the Bank of England could issue £ 100,000,000 without any gold reserve, but for an issue of every pound over and above this it had to have one pound's worth of gold in its reserves. The American System of percentage-reserve is different. There the Federal Reserve Bank must possess gold or gold certificates to the extent of 10% at least of their total note issue. There is also another provision in the American system which makes it necessary for the Federal Reserve Bank to keep a reserve of 35% against the deposit liabilities of the Federal Reserve Bank. These deposit liabilities are formed of the cash deposits of the Member Banks of the Federal Bank. These deposits can be maintained either in gold or notes. But if they are maintained in notes, then 40% backing of gold has to be provided for them, according to the earlier stipulations of the American Law. These two systems are the most important, although some countries follow slightly different systems. Most common, however, is the percentage reserve system. But, whatever system a country follows one thing is common to all and that is that liability of the Central Bank to issue notes is limited. In no circumstances, short of breaking the law can any Bank issue more notes than is allowed by the gold holdings. It can, however, if it chooses, issue less notes than the gold reserve allows. As a matter of fact most Banks issue less, keeping a part of their gold holdings in reserve, for emergencies. The important function that the gold standard thus performs is to keep a check on sudden and arbitrary increases in the

volume of currency, which if allowed would be very disruptive to the smooth running of the economy of a nation. The aspect of the Gold Standard which concerns itself with this function is generally called the 'Domestic Gold Standard'. We will return to an examination of this presently.

The second function of the gold standard concerns itself with the preservation of stability in exchange rates. A country which is on the gold standard imposes upon its Central Bank the obligation of buying all gold offered to it and selling all gold demanded of it, in unlimited quantities. For example, before England went off the gold standard, the Bank of England was under legal obligation to buy gold at £3-17s-9d and to sell it at £3-17s-10½d. per standard ounce. Thus the price of gold in the London Bullion market could fluctuate only within a range of 1½d, which for all practical purposes meant that the price of gold was fixed. Other countries had similar arrangements, fixing a ratio between an ounce of gold and the unit of their currency, as well as the legal obligation of buying and selling an unlimited amount at that fixed ratio. The implication of this is simple. If a certain amount of gold is worth a pound and the same amount of gold is worth a certain number of dollars then a pound will be equal in value to that number of dollars. Supposing e.g. if £1 is equal to 100 grains of gold and the same amount of gold is equal to \$4.5, then it is obvious that £1 is equal to \$1.5. Now if the price of gold in terms of pounds is fixed and the price of gold in terms of dollars is also fixed, then it stands to reason that the price of pounds in terms of dollars is also fixed. But since England and U. S. A. are separated by time and space, both of which require money to overcome, the value of £1 and \$4.5 may not be exactly equal. The difference will be equal to the cost of shipping £1 or \$4.5 worth of gold between England and America. This cost will include freight, insurance and loss of interest for the time taken. But the total cost is never likely to be very great. In 1925 it was calculated to be 1½ cents for a pound's worth of gold. Supposing in our imaginary case the cost is 1 cent., the 'mint parity' between pound and dollar will then be £1 \$4.51. Now if the exchange rate between pound and dollar falls in the market to say \$4.3, it would become cheaper

to buy gold in England than in America. It would be easier to buy gold in England, ship it to America, pay 1 cent as cost and sell it in America for \$ 4.51. Similarly if the rate rose to \$4.8 for £1, it would be cheaper to import gold from America. The points at which gold movement becomes profitable are called 'gold export points' and 'gold import points', 'gold export point' being the point at which gold begins to be exported on a profitable basis, 'gold import point' being that point at which gold begins to be profitably imported. When the rate of exchange changes from £1 \$4.5 to £1 \$4.3, it means that there is a greater demand for dollars than the supply. Under such conditions gold is bought from England, with the result that the excess demand for dollars is used up in buying gold in England. As soon as this extra demand is used up, equilibrium between demand and supply is reestablished in the market and the rate of exchange reverts to the same level of £1 \$4.5. In a similar manner an import of gold from America will use up the extra demand for pound if the rate changes to £1 \$4.8 and the equilibrium will be established again. The gold standard thus provides a means by which the exchange rates are maintained at a stable level through the movement of demand and supply of a currency in the exchange market. In actual practice the exchange rate cannot be maintained at one fixed level, but is allowed to fluctuate within a very short range of say about 1%. This is the range between the 'gold export point' and the 'gold import point'. This 1% of fluctuation is so small that it can be said that the gold standard stabilises the exchange rate at one level. This second function of the gold standard is generally referred to as the International Gold Standard.

These two functions of the gold standard are distinct, and even separable. A country can have a Domestic Gold Standard and yet give up International Gold Standard and vice versa. In 1931 when England went off the Gold Standard it was no longer under obligation to buy or sell gold at any price, but it continued to regulate the volume of its currency according to the stipulations about maintaining a certain fixed reserve of gold. Similarly it is possible to be off the Domestic Gold Standard and keep the International Gold Standard. Not only is this possible it sometimes happens that the two func-

tions of the gold standard come in conflict. This happens when the gold reserve kept as a backing for currency is needed for export. For overcoming such emergencies some countries maintain two reserves, one for keeping, the other for export.

Let us now examine the Domestic Gold Standard in greater detail. The purpose, as we have pointed out before, of the Domestic Gold Standard is to prevent any undue expansion of the currency. The question that we will now examine is whether this purpose of the Domestic Gold Standard is achieved by it or not.

1. Firstly, is this the only way of keeping the currency in check? Why, for example, cannot the Government fix a certain limit for the issue of notes without any reference to a reserve of gold, as was done in France in 1914 and thus save a considerable amount of gold from lying idle? Or, which would be better, not to fix any limit, but let the authorities decide how much currency is required at any time. Inflation which it tries to avoid is really not merely a function of the volume of currency. Expansion of currency is only a later phenomenon of inflation, so that when inflationary conditions have been afoot for sometime, it is useless to check them by forcing down the volume of currency for that would only produce worse results and will not help in warding off inflation. If authorities are trusted so far as to be responsible for checking inflation in time or for letting it slip in, why not let them be responsible for deciding the volume of currency in circulation? The method will in no way be less efficient and will, as an advantage, be much less wasteful, because it will require no stock of gold to be constantly locked up in the vaults as a reserve.

II. Actually the domestic gold standard does not stabilise the volume of currency but only stabilises the ratio between gold reserve and the amount of currency to be issued. The volume of currency will remain stable when the volume of gold remains stable, but when the volume of gold itself fluctuates, the volume of currency will naturally be forced to fluctuate with it. Thus not the volume but the ratio between gold and currency is stabilised. It can how-

ever be maintained that though the gold in a country might fluctuate, yet the gold reserves of all the countries put together cannot fluctuate very much, because the output of gold in the whole world in a short period is likely to be only a fraction of the existing stock. This is, however, misleading. Firstly because this applies to the total gold in all uses, while the monetary gold could be easily increased by the release of hoards by the capitalists. If this occurs without there being any extra production of gold, the volume of reserves will shoot up, thus requiring a corresponding change in the volume of currency. Secondly in an expanding progressive world, there must be an expanding supply of currency, and if the annual increase in the supply of gold is not sufficient to meet the annual increase in the demand for currency then there will be a discrepancy between the supply of currency and the demand for it and consequently a tendency for either rising or falling prices. Stability will be lost. Thirdly a rise in the price of gold caused by a shortage in its supply and in its relation to its demand, may release forces which would greatly augment the supply of gold. This would happen in two ways. First the production of gold will increase due to the attraction of a high price and also due to the depreciation in currency, which will mean lower wages to the miners and lower costs in general. So that, what might appear a shortage of gold may actually turn out to be a surplus. This is what happened in 1931. This would again impair stability.

Thus we have seen that no country intending to achieve stability for currency will succeed if it only fixes a ratio between gold and the volume of currency. If the volume of currency is to be successfully stabilised something will have to be done in respect to the conditions of demand for a supply of gold. The demand for gold is the demand for money (as long as gold reserves are maintained), and the demand for money is also the demand for gold. The supply of gold is the existing stock plus every year's production. Now if economic progress is more rapid than the increase in the supply of gold, then the demand for gold will exceed the supply of gold, and the value of gold will consequently rise. The value of gold will fall when the demand for gold falls short of the supply. Now as long as the value of gold is fixed by law, any change in it in the market will show itself through changes in the general price-level. One of

two ways can be employed to remedy this.

(a) Either the supply of gold can be made to keep up with the changes in the demand of gold so that the equilibrium is maintained and no fluctuations in the value of gold take place.

or (b) if the supply cannot be controlled in this manner so that the value of gold must fluctuate, then this fluctuation should be allowed to show itself in the price of gold and not in the price of everything except gold. Thus all those plans which try to remedy the defects of the gold standard endeavour to do so on one of these two lines. There are many such plans. We will examine a few of them:

(1) The first plan aims at controlling the supply of gold. This can obviously be done only on an international level. But physically, it is impossible to keep the production of gold under control. So what has been suggested is to establish an international body, which would hold all the reserves of all the central banks in the world and in place of them issue to the various central banks 'gold certificates' which would be held by them as their reserves and which would be transferred from one bank to another in place of actual transfer of gold. This would make it possible for the international body to issue more or less certificate than the gold it holds and thus control the supply of gold for monetary purposes. But as will be evident this scheme can solve the difficulty of a shortage of gold, but it will not successfully solve the other problem of an excess of gold supply.

(2) Another scheme endeavours to change the price of gold in accordance with the changes in its value. It states that when the price-level changes by say 2 %, it means that there has been an equivalent change in the value of gold. A fall of 2 % in price-level is equivalent to a rise of 2 % in the value of gold. So that when prices fall by 2 %, they could be brought back to the original level by an increase in the price of gold by 2 %. The idea behind this plan is to let the changes in the value of gold affect the price of gold alone and not the prices of everything else.

This plan is simple and appealing but in operation it has one great difficulty to face. It assumes that changes in price level are directly related with the value of gold. There is no doubt that a fall in prices is the same thing as an increase in the value of gold, but it cannot be said that the rise in the value of gold is the cause of the fall in prices. The prices rise and fall due to a number of complex causes related with Savings and Investment. Thus a plan which intends to rectify every change in the price-level by an adjustment of the price of gold is not likely to hit the nail on the head, specially in the short-period when changes in prices have nothing to do with the supply of money. The "commodity dollar" plan adopted by America was of this type and it failed due to the difficulty we have just cited.

(3) Another plan of long standing is bimetallism, which provides for the use of both silver and gold as monetary standard together. Under this plan currencies are to be convertible into either gold or silver at fixed rates. The minimum reserve against the issue of currency could consist of either gold or silver. As will be obvious this plan aims at overcoming the difficulty of shortage of gold supply. There is no doubt that it will solve that difficulty, but there are other serious obstacles in the way of its operation, which have to be seriously considered.

(a) The ratio which it must fix between gold and silver cannot be maintained at a fixed level, because each of these metals is subject to entirely independent conditions of demand and supply. If it is maintained at that fixed level, the result will be that one metal will be over-valued and the other under-valued. If one country is following the bimetallic system and if according to the fixed ratio silver happens to be cheaper than in the rest of the world all the countries would buy silver from this country, until it is completely drained of all silver. The same will be the fate of gold if it is cheaper than in other places of the world. But if bimetallism was followed by the whole world this difficulty will be obviated. Another difficulty will, however, be created.

(b) At any time due to a fixed link between the two metals it will be profitable to mine one metal in comparison

with the other. The supply of one metal will then relatively increase, with consequent effect on its price.

(c) Besides, bimetallism does not secure that the currency is based on *both* silver and gold, but that it is based on *either* gold *or* silver, which is quite different from its being based on both together. Being based on gold and silver it is doubtful whether it will be, to any extent, different from the currency based on one metal only, at least inasmuch as stability is concerned. Forces which are disruptive of stability when the currency is based on gold alone will be equally operative when it is based on both gold and silver separately.

It was with an aim to overcome these obstacles that Marshall proposed "*symmetallism*". Under this system the currency will be convertible not into gold or silver, but gold *and* silver, possibly combined in an amalgam. The Central Bank will be obliged to buy and sell this combination and not gold and silver separately. The proportion in which the two metals will be combined will be determined by the authorities concerned. The reserve will also be maintained in this combination. This arrangement will allow the relative price of gold and silver to change freely, provided their combined price remained the same. Such an arrangement will, therefore, utilise the supplies of both gold and silver, without having to maintain a rigid link in the prices of both the metals. This arrangement will certainly be better than gold standard as long as there is a shortage of gold, but it would be helpless against an excess of gold for it has no provision against such an eventuality.

We have discussed individually all the various plans and pointed out the defects in each one of them. As a whole they are all based on one belief and that is that trade cycles are caused by fluctuations in the quantity of money, so that if the quantity of money could be kept under control, the trade cycles could be controlled. This belief is, however, erroneous. It neglects so many other factors which are causal to booms and depressions. There is no doubt that depression may be brought about by a shortage of the supply of money, but this is not the only cause which will bring it about. Moreover when we talk of reduction of currency, (which is

all we can accomplish through any of the plans discussed above), we do not necessarily talk of reduction of money. We certainly imply that, but in fact this may not happen. It is possible at any time that the currency may be increased and yet the volume of money may be reduced, or vice versa. For example, if in a depression when there is a fall in the quantity of currency, there is also a distrust of the banks. People will seek to hold with themselves a larger proportion of the total quantity of money with the result that the value of currency in circulation will rise. Thus it seems evident that no plan or scheme whose sole aim is to control the quantity of currency will promote general monetary or economic stability because these are dependent upon a variety of complicated causes.

Thus the Domestic Gold Standard with all the alterations and variations suggested in it, does not seem to serve the purpose for which it is intended. The only purpose which it seems to fulfil is to provide a kind of an atmosphere of security. The fact that the people know that the currency is backed by a reserve of gold makes them more confident in it. Gradually as in England the gold backing is being reduced to almost nothing. As soon as the people realise that for good money it is not necessary that it should either be gold or backed by gold, the Domestic Gold Standard will die a natural death.

International Gold Standard:

Let us now turn to the other function of the Gold Standard, that of maintaining stability in the exchange rates. This function is generally concerned with the International Gold Standard. The method by which the stability of exchange rate is maintained has already been explained. Whenever there is excess demand of a currency in the exchange-market, it is shunted from the foreign exchange market to the gold market. This is possible only on the assurance that gold is available in the gold market at a fixed price. If this assurance was not there, then no one will be willing to leave the foreign exchange market for the gold market. This assurance is provided by the free convertibility of money into gold and of gold into money. Thus without this free convertibility, no

stability of exchange rate can be maintained. The problem of stability of exchange rates then becomes the problem of maintaining convertibility.

This convertibility can be maintained if the gap between the demand for and supply of a currency is not allowed to become too large or too persistent. If this unbalance in transaction is large and persistent, one country will have to keep on exporting and the other importing gold. The disadvantages of both these positions are such that no country will like to be in such a situation. Thus gold movements can rectify only temporary dislocations in the demand and supply of a currency.

Now if this is to be accomplished the International Gold Standard must have a set of devices by which any disequilibrium between supply and demand for a currency is immediately corrected. The demand for and supply of a country's currency depends upon the prices and costs in that country and prices and costs in other countries. If the prices in a country A are higher than the prices in another country B, the demand for A's currency will fall off and the supply of it will increase. If A is on gold standard, this will mean an outflow of gold from A to B. On the other hand if the prices in A were to be comparatively lower than the prices in B, there would be an inflow of gold into A. Now in either case the outflow or the inflow will continue until the prices in the country concerned are brought back to a relative equality to the prices of the rest of the world. Since it is not possible for any country to allow an outflow of gold or an inflow of gold indefinitely, it becomes necessary to devise a means for securing a fall in prices when gold is flowing out, and a rise in prices when gold is flowing in.

But prices cannot be made to fall or rise in a short period of time. Therefore it also becomes necessary to find out means which will control to a certain extent the movement of gold till prices can be materially changed. This can be done through movements of capital. The influence of capital movement cannot be permanent, but in the short period it is effective.

Both these objects of capital movement and changing of the price-level can be affected through the control of credit and the Bank Rate. If there is an outflow of gold, prices must be brought down in the long run and in the short period capital must be attracted into the country. If the Bank Rate is increased and credit restricted both these objectives will be achieved. With a higher Bank Rate funds invested outside will be attracted and also other countries will find it more profitable to invest in a country with a higher bank rate. The demand for the currency will rise thus stopping the outflow of capital. Another consequence of an increase of Bank Rate will be that the rate of interest generally in the country will rise. This phenomenon will be a great deterring factor to foreign borrowers. Thus the amount of money borrowed by foreigners will fall, reducing as a consequence the outflow of capital.

Similarly a rise in the Bank Rate will reduce Investment and stimulate savings, a reduction in Investment will tend to bring down the prices. The converse will be equally true. A reduction in the Bank Rate will by increasing Investment make for a rise in prices. People borrow for investment only when they are sure that the profits obtainable from the investment will at least exceed the rate of interest to be paid on the loan. If the Bank Rate is high it will deter many borrowers, who will not be willing to take the risk of investment, because of the uncertainty of obtaining a higher profit than the Bank Rate. The total amount of investment will therefore have a tendency to diminish. A fall in investment will mean an increase in savings. When savings increase there will be a decrease in demand and also a tendency for the level of activity to fall. Due to these factors prices will also tend to fall. Conversely, due to an increase in investment, when Bank Rate is low, prices will rise.

Thus we can now say, that a reduction in Bank Rate and restriction of credits will produce the following three results:

- (1) increase in the inflow of capital, which in other words would mean an increase in the demand for the currency.

- (2) decrease in the loans to foreigners, which would mean decrease in the supply of currency going into the exchange market.
- (3) a fall in price.

Conversely a reduction in Bank Rate and expansion of credit will mean outflow of short-term capital, increase in foreign lending and a rise in prices. Thus the golden rule of the Gold Standard is: expand credit when gold is coming in; contract credit when gold is going out.

This is a bare outline of how the International Gold Standard operates in practice. It must be, however, borne in mind that the International Gold Standard can work harmoniously in the way described, only under 'normal' conditions—if e.g. while the Bank Rate is increased in England and short-term capital is expected to follow in, there is a feeling among other countries that a crisis is about to precipitate in England. This feeling will hamper all movement of capital into England in spite of the attractive conditions. As a matter of fact this feeling may be so strong, that there might be a stampede to withdraw capital from England. Opposite to whatever expected will therefore result. This is precisely the reason why the Gold Standard functioned smoothly until 1914; and since then due to unforeseen circumstances and the increased uncertainty and stress on the monetary system of every country, the International Gold Standard has failed to function properly. As a matter of fact the problems now facing the world are not the ones which can be easily solved by the application of the golden rule. Though it has tried and still endeavours to maintain the stability of exchange rate, it cannot do anything about the periodic swings of Over-Investment and under-Investment, of inflation and deflation. In the 19th century this defect was not very serious because the price movements were neither large nor sudden, but in the modern world the conditions are completely different. The instabilities of the monetary systems are so great that each country is concerned chiefly to maintain the stability in this sphere even at the cost of instability in the foreign exchanges.

CHAPTER XLVIII FOREIGN EXCHANGE

When a rupee is paid to an Indian merchant in exchange for the goods and services bought from him, he would readily accept it for it is a legal tender and passes from hand to hand without difficulty. But when a rupee is paid to an English merchant in exchange for his goods and services, he would refuse to accept it as he could not with that rupee buy anything in his country. A different currency, viz., the £ is in use there. This fact of the non-acceptance of the Indian rupee by an English merchant, however, does not prevent an Indian from buying goods in England; it only makes less simple the problem of payment. The Indian merchant will have to get his rupees exchanged for a certain number of £s first and then pass these on to the English merchant. Foreign exchange refers to the fact of paying the foreigner certain amount of one's own currency after it has been exchanged into the currency of the foreigner. The precise meaning of the term "foreign exchange", however, varies with the context in which it is used. If we say that India needs today such and such amount of foreign exchange to buy capital abroad, we mean by it the amount of foreign currency that India would like to exchange for her own currency for foreign payments. If we say that the foreign exchanges of India have not been widely fluctuating for some time past, we mean that the rates of exchange between the rupee and the foreign currencies have been almost constant. Foreign exchange also refers sometimes to bills of exchange and banker's drafts etc. And sometimes it might refer to the mechanism through which trade accounts are adjusted between the various countries of the world.

The necessity for exchanging rupees into £s arises because rupee is not legal tender in England. Had there been a coin or currency that was legal tender in all the countries of the world, the necessity of such an exchange would have disappeared. But there is none such unfortunately. The U. S. A. once made a proposal that all the countries should use an international monetary unit called "Unitas" (consisting of $137\frac{1}{2}$ grains of fine gold). The United Kingdom made a

proposal that all the countries should use a currency called "Bancor". But neither of these proposals materialised. And each country of the world continues to follow the same rut of exchanging one's currency into the foreigner's to make payments to the latter.

Ratio of exchange under a gold standard. The question that crops up here is how does a country decide the rate at which its own currency is to be exchanged for the foreigner's? Or in other words what is the theory of the determination of the rates of exchange between the countries of the world? When the countries concerned happen to be on a gold standard the determination of such rates, provided there is free movement of gold between them is easy and automatic. Haberler says, "If two or more trading countries are on the gold standard, and if there are no obstacles to the import and export of gold, then the different currencies are rigidly linked together. For instance, if an ounce of gold can be coined into a definite number of pounds sterling and into twenty times as many marks, then, under the provisional assumption that no costs are involved, one can convert at will 20 marks into 1 £ and vice versa". And the rate of exchange is thus automatically fixed at 1 £ = 20 marks.

A gold standard says Harberler "in the narrower sense signifies a monetary system under which gold coins of standard specification or gold certificates with 100% gold backing form the circulating medium. In the wider sense it covers all those cases where notes or silver coins are legal tender provided they are convertible into gold at a fixed rate. There must of course, be no prohibition of the melting down of gold coins".

What happens if the rate of exchange in the countries referred to is not 1 £ = 20 marks but something else? Suppose that it is 1 £ = 18 marks only. People now, in the country where marks constitute the currency, will like to exchange marks for £s, convert £s into an equivalent amount of gold, and get that gold converted into marks again. Suppose one ounce of gold is equal to X £s in one country and as said above to $20X$ marks in another then the rate of exchange should be 1 £ = 20 marks. If it is 1 £ = 18 marks then people will sell $18X$ marks for X £s, obtain an ounce of gold for those £s

and have it converted into 20X marks again. They spend 18X marks and get 20X marks, making thereby a profit of 2X marks on the transaction. When a large number of people thus begin to convert marks into £s to make profit like this, the value of the £, owing to increased demand, supply remaining the same, will go up till 1 £ = 20 marks in the end. If the rate is 1 £ = 22 marks, the opposite process would set in. The demand for marks would increase, the value of marks would go up till 1 £ = 20 marks again. Eventually then the rate of exchange under a gold standard, with free convertibility between currency and gold and unchecked flow of gold between the trading countries would necessarily be such that one unit of a country's currency would be convertible in the same amount of gold in which those numbers of units of other countries' currencies to which the one unit of the former country's currency is equal would also be convertible.

Under a gold standard, the problem of payment can be greatly simplified provided there is ample supply of gold available for making payments. For then if some one in Germany purchased X £s worth of goods from an English merchant, he will at once ship him an ounce of gold which when got converted into £s will make the merchant there the wanted number of £s available. So also can an English buyer send gold to a German merchant for the goods purchased from him.

The technique of foreign bills of exchange. Ordinarily gold is not thus transported. There has been in fact a growing tendency to economise the use of gold in international payments. The next course open, then, to take up our own example, is that the German merchant should purchase £s at the rate of 1 £ = 20 marks and make payment to his English creditor, for the goods that he has bought from him. In reality, however, even this may not come to pass. Owing to the use of foreign bills of exchange and the presence of a large number of buyers and sellers of English and German goods in both these countries, the necessity of exchanging marks for £s and £s for marks might be greatly obviated. We shall see now how this happens but before we do that, we better understand that chief instrument with the help of which international transactions are settled. This instrument is called the

foreign bill of exchange. A foreign bill of exchange is a claim drawn by a seller upon a foreign buyer for the amount for which he has sold his article to the latter. This claim should be fulfilled within the period of time for which the bill has been drawn. There are three main points of difference between a cheque and a bill of exchange. A bill will be drawn on any one who owes a debt to the drawer whereas a cheque is ever drawn on a bank only. A bill is payable on maturity (unless it is a sight bill) i.e., when the time for which the bill has been drawn just expires but a cheque is payable at sight. A bill will have validity only when it has been 'accepted' by him on whom it is drawn; a cheque needs no such "acceptance".

The use of foreign bills implies the avoidance of actual exchange of currencies. Suppose that a German buyer has placed an order for goods worth £1000 with an English merchant. The English merchant will then draw upon this German buyer a bill claiming £1000 from him for the sale that he makes to him and send this bill for acceptance to him. The German buyer will write the word "accepted" and sign it on the bill and send it back to the English merchant who has now the promise from the former that he would pay him £1000 when the bill is presented to him after maturity.

Suppose also that there is an English buyer who has bought goods worth 20,000 marks from a German merchant. There are now four parties to settle their account. The English merchant and the German buyer, the German merchant and the English buyer, two of these having claims for payment and two having obligations to pay.

Now this is what generally will happen. The English buyer who has to make the payment of 20,000 marks to some German merchant will meet the English merchant who claims £1000 from some buyer in Germany and purchase from him the "accepted" bill of £1000. He will then send this bill to his creditor in Germany who owes him 20,000 marks with instructions to present this bill to the German buyer of the English merchant's articles and get from him the 20,000 marks that are his due. Thus we see that the English merchant has received his £1000; and the German merchant his 20,000 marks. The English buyer has paid 20,000 marks (when he purchases

the English merchant's bill for £1000) and the German buyer has paid £1000 (when he makes payment to the German merchant.) The entire transactions are settled with the mere transportation of a single bill of exchange from England to Germany. And no necessity of bothering to obtain marks for £s and £s for marks ever arose.

As in the case of these four parties of our own example, so also in an extended case where hundreds of parties are engaged in buying and selling their respective goods and services, accounts generally tend to be settled with the assistance of the foreign bill market. They are the suppliers of the foreign bills who owe money abroad and they are those who demand such bills who have to pay money to the foreigners. It may be that the supply of foreign bills at any time falls short of the demand for it—there are more people who have to make payments and less who have to claim. Or the supply may be greater than demand implying larger number of those who have to claim payments abroad than of those who have to make their payments. We shall analyse both these situations. Let us take that situation first in which the demand for foreign bills is greater than the supply of them.

Disparity between exports and imports and its impact upon the rate of exchange. We now get back to our earlier example of Germany and Great Britain with gold standard working at 1 £ = 20 marks. Suppose that there are less German exporters to England than there are German importers of the English goods. The supply of foreign bills on England, therefore, would be less than the demand for them, there being more of those who have to pay to England than of those who have to receive from that country. Now if German importers do not buy these foreign bills on England but transport gold instead to that country for paying off their debt, there must be some transport charges also incurred in gold transportation. Suppose that the transportation charges of gold per £ to England are $\frac{1}{2}$ a mark. Then for every parcel of gold sent, the German importer will be a loser to the extent of $\frac{1}{2}$ a mark per £ and the rate for him would really be 1 £ = $20\frac{1}{2}$ marks, rather, than 1 £ = 20 marks. The German importer, who cannot have foreign bills on England in abundance,

will think twice before he is willing to incur a loss of $\frac{1}{2}$ a mark per £.

Here on this side, the supplier of bills on England seeing a scramble for their bills amongst the German importers will like to exploit the situation by charging a larger number of marks for the same number of £s than before. This they can do when they ask the buyers of their bills to pay not at 1 £ = 20 marks rate but at a rate which is higher than this.

Let us suppose that they demand the rate 1 £ = 21 marks from the buyers of their bills. Will the buyers agree to this rate? No. If they do not buy these bills and send gold instead, they would be paying back their debt at 1 £ = 20½ marks only. Why should they agree to buy the bills at a rate more unfavourable than this? Suppose the sellers of the bills are willing to sell their bills at 1 £ = 20½ marks. Will the buyers agree now? Yes, they will because they spare themselves the loss of $\frac{1}{2}$ mark per £ which direct transportation of gold would have involved them in. So long as, in the situation of the supply of bills on England being less than the demand for them, the rate of exchange is less than 1 £ = 20½ marks, the German importers of English goods who have to make payment for these goods to the English merchants will find it less advantageous to export gold and would rather buy these bills from the German exporters. When the rate rises above 1 £ = 20½ marks i.e., it becomes 1 £ = 20¾ marks say, they would transport gold instead. 1 £ = 20½ marks is thus the gold export point or the lower specie point for Germany. It sets the limit within which the foreign bills on England can be purchased by a German importer; at 1 £ = 20½ marks, the German importer may either send gold to England or purchase the German bills on that country according to his convenience; his sacrifice, however, would be the same in both the cases — equal to $\frac{1}{2}$ a mark per £.

When the supply of foreign bills on England is greater than the demand for them, the opposite analysis would work out. There will be more of those who have exported goods to England and want payment from that country than of those who have imported goods instead and have payments

to make. Now if German exporters do not sell their bills to any one but present them to their debtors at the due time to get an equivalent amount of gold in England and have it transported to Germany, then still under the assumption that the transportation cost is $\frac{1}{2}$ mark per £, the eventual rate of exchange for them would work out to be 1 £ = 19½ marks rather than 1 £ = 20 marks, implying a loss of half a mark per £ to them. They would not easily agree to incurring this loss. What will they do then? They would try to sell their bills rather than permit them the botheration of importing gold from England. But the demand for bills being not as great as the supply, the bills are bound to be offered a lower price now than before. The buyers of the bills would exploit the situation by agreeing to pay 1 £ = 19 marks only. Will the sellers agree? No. For here they are losers to a greater extent. If they get gold imported from England, they suffer a loss of $\frac{1}{2}$ mark per £ only and if they sell off their bills, their loss is 1 mark per £. They would agree to sell their bills just so long as the rate is such that their loss in selling the bills is less than their loss in getting their gold transported from England. The limit is evidently set by 1 £ = 19½ marks, beyond which if the rate of selling the bills on England goes, gold would tend to be imported into Germany. 1 £ = 19½ marks is the gold import point or the upper specie point for Germany.

When the rate of exchange is such that gold tends to be imported into Germany, we say that the rate is favourable. When it is such that gold tends to be exported from Germany, we say that is unfavourable. When we cross the lower specie point, the exchange rate is favourable; when we cross the upper specie point, the rate of exchange is unfavourable. That which is the gold import point or upper specie point for Germany is the gold export point or the lower specie point for England; that which is the gold export point or the lower specie point for Germany is the gold import point or the upper specie point for England. The rate of exchange for Germany rises above the gold export point when the supply of bills on Germany is greater than the demand for them and secondly there is difficulty in exporting gold to England. The rate of exchange for Germany falls below her gold import point when demand for bills on Germany is greater than their supply and

secondly there is difficulty in importing gold from England. It can be easily imagined now that in face of the growing Indian demand for American goods, rupee would have easily passed above the gold export point had the perfect conditions of an international gold standard prevailed. The supply of bills on India being greater and gold being not easily obtainable for exportation, what else could have been the result ?

Now when the rate is tending towards $1 \text{ £} = 19\frac{1}{2}$ marks or beyond, we have seen that it is tending to be favourable and the situation is characterised by a supply of bills on Germany being smaller than the demand for them; exports from Germany to England are greater than the imports from England to Germany. But when the rate is $1 \text{ £} = 19\frac{1}{2}$ marks or about that, a reverse process comes in evidence; the imports begin to increase and exports go down till exports and imports have become equal; there is the same supply of bills as there is the demand for them and the rate is once again set at $1 \text{ £} = 20$ marks.

Why does this happen ? Because £ has become cheaper and the German merchants naturally want to take advantage out of it. For the same thing which costs 1 £ they were paying 20 marks before; but they will pay only $19\frac{1}{2}$ marks at this time. And so a tendency sets in to import goods from England into Germany for they are cheaper now in terms of the German marks. Imports to Germany move up and there appear more of those who supply foreign bills of exchange on Germany.

On the other side in England, there is a tendency for the English merchants to export more and more to Germany. Formerly when they sold an article worth 20 marks in Germany, they got 1 £ only; now when they sell the same article worth 20 marks in Germany they get more than a £ . Exporting becomes more profitable to England than importing from Germany. Thus we see that both in England as well as in Germany, tendencies being to work to set right the disturbed trade balance between their respective exports and imports. In Germany imports increase and hence the supply of bills on Germany also increases; exports decrease and hence the demand for bills on Germany becomes less plentiful than before. And these two tendencies go on work-

ing till exports are equal to imports; the supply of bills on Germany is equal to the demand for them and the rate of exchange is restored to the equilibrium level of $1 \text{ £} = 20 \text{ marks}$. At the same time opposite tendencies work in England to set right the trade balance and the rate of exchange.

Under a gold standard, therefore, not only is the rate of exchange easily determined, but there is a tendency for the rate to continue at its equilibrium level with slight fluctuations within the gold export and gold import points which tend to correct themselves in the long run. Now when the rate for Germany is approaching the gold import point, imports into Germany begin to increase. At such a time we say that the English currency viz., the £ is cheaper and the German currency is dearer or in technical language the £ stands depreciated in value whereas the mark stands appreciated. Depreciation of a currency therefore leads to exports as it does in the case of England and appreciation leads to import as it does in the case of Germany. Appreciation of a currency implies that its value in terms of foreign currency has gone up; depreciation implies the opposite—that its value in terms of foreign currency has gone down.

But depreciation of a currency is not the same thing as devaluation. A currency is devalued when its legal relation to gold is altered by law. The fine gold contents of the American dollar were reduced by $11\frac{1}{2}\%$ in 1934; the dollar was thus devalued. The dollar would be said to depreciate when though its gold content continues to be the same as before, its value in terms of foreign currencies has gone down or which is the same thing, it buys smaller amounts of foreign currencies than before. Modern governments earn profits through devaluing their currencies. These profits are kept up to be used in emergency. The technique of the devaluation of currency in terms of gold has then naturally come to be linked up with the wider technique of exchange control.

The mint par between any two currencies is the rate at which these currencies exchange for each other on the legal backing of the gold contained in them. If an American dollar contains 23.22 grains of fine gold and a British sovereign contains 113.0012 grains of fine gold, one sovereign we say

is equal to 4·866 dollars and this is what expresses the mint par between the dollar and the sovereign. A mint par, it should be remembered, indicates a legal relationship only. Even if in reality a dollar, owing to clipping from use contains less than 23·22 grains of fine gold, the relation between sovereign and the dollar would not be altered for that reason. Whatever be the *de facto* position, the legal position will make us accept that one sovereign does contain as much gold as 4·866 dollars.

Discounting of the foreign bills of exchange. Often times it happens that when a creditor in a country has drawn a bill on his foreign debtor he gets eager to have his payment earlier than the time for which the bill has been drawn. In such a situation, a class of people called the bill brokers come ahead, with an offer of an immediate payment which is less than the payment indicated in the bill by the amount of interest which they could have earned in case they had not paid the amount in buying the foreign bill. If the bill is for an amount X , and would mature in three months' time, they would only pay the present worth of the amount X at the existing market rate of interest; they might also deduct from that present worth the charges for insuring against risk of losing recovery of that bill after due time. The higher the credit of the debtor, the less the risk and hence the less the charges for risk.

This process of discounting the foreign bills by bill brokers which in most cases might be a well established bank of a country has a double advantage. It allows on the one side bill brokers to invest their money in these bills and earn interest on the investment and on the other side it fulfils the needs of the person who has drawn the bill on his debtor and thereby facilitates his expanding of trade without letting him to wait for the period of maturity indicated in the bill.

The discounting of bills, however, depends considerably on the credit of the persons on whom the bills are drawn. Even the very sale of bills would not be easily possible if the bills to be sold are drawn on persons with no financial standing or popularity. If Seth Dalmia has sold goods to Mr. X in England and consequently drawn a bill on him, but Mr. X is

an ordinary obscure merchant of his country, seth Dalmia's bill may not find buyers at all. For who would risk buying a bill on some one whose obscurity can easily give rise to doubts that the bill might never be recovered at its proper time? To remove such risks, merchants on whom bills might be drawn appoint some "A. B. and Co." of their country to act as "correspondents" for them and bills then begin to be drawn on these correspondents who ultimately stand responsible for the payment of the bills drawn on them. The bills are accepted by the correspondents and paid by them also. The correspondents generally are some banks or banking firms of the country.

It is not necessary, however, that a bank should accept bills drawn on men of its own soil only; often times banks maintain stocks of foreign currencies and accept bills drawn on foreign people also. The city of London accepts bills which might emerge out of a trade which has least to do with that country in the heart of which it happens to be. For acting as correspondents, the banks naturally charge a commission.

Forward Exchange. Banks perform yet another service to the traders. They sell "forward exchanges" to them and guarantee them against emergence of loss from fluctuations in exchange rates. If A, an Indian, buys goods in England worth a £ today and the rate of exchange is 1 shilling 6 pence = 1 rupee, then after three months A has calculated he will have to part with Rs. 13½ for payment. If however, the rate of exchange after three months changes to 1 sh. 4 d = 1 rupee, will not A be a loser in paying Rs. 15 for the same goods costing the same price of a £ in England? To save A from such a loss, some bank will agree to sell to him "forward" exchange at the present rate of exchange so that A will have parted with Rs. 13½ only, even though the rate of exchange after three months has changed to 1 sh. 4 d. a rupee. At the time of payment A will purchase the amount forwarded to him at the former rate for which the bank contracted with him and pay off his English debt.

Will not the bank, it might be asked here, suffer a loss in contracting to sell after three months at a rate which is

disadvantageous to it relative to the rate prevailing at the time of payment? Well if a bank were to make losses like this it would vanish. To save any loss to itself, the bank will at once, soon as it makes a contract, purchase a £ in London at the rate 1sh. 6d. per rupee and deposit it in a London bank. What matters to it now if the rate after three months changes to a shilling and four pence a rupee? The bank has secured itself against a loss.

As *A* wants to purchase a £ in advance, others might be who want to sell £s in advance. For they fear that after three months or so when the bill matures, the money that they would receive would be less than that which the prevailing rate of exchange warrants. An Indian who has to receive one £ at 1sh. 4d. a rupee would like to be sure of it; he fears that the rate might be 1sh. 6d. a rupee after three months and then the same £ will mean him smaller amount in rupees than before. He will thus sell his £ in advance to a bank.

This buying and selling of currencies in advance is known as "forward exchange" business. "Forward exchange" as we have seen above is a device to get rid of losses resulting from fluctuations in exchange rates.

Exchange ratio without gold standard. After this digression we come to the consideration of the determination of exchange rates again. Under a gold standard we saw that the problem was simple. What happens when the conditions of gold standard do not obtain? Ever since gold standard went out of fashion amongst some of the leading countries of the world, economists have been greatly in search of a correct theory explaining the determination of foreign exchange rates.

The theory of absolute purchasing power parity. Two explanations or theories have been advanced. The one is the theory of purchasing power parity and the other that of the balance of payments. We shall take up the purchasing power parity theory first.

If 1,250 dollars buy a certain amount of goods and services—wheat, shirts, houses, etc. in the U. S. A. and 100,000

francs buy the same amount and quality of goods and services in France, then the rate of exchange between France and the U. S. A. would be 1,250 dollars = 100,000 francs or 1 dollar = 80 francs. The equilibrium rate of exchange will be such that one unit of a country's currency will buy the same amount of goods and services which so many units of another country's currency, to which it is equal, will buy on their own soil. In other words, the rate of exchange will be such that the two sides to it have the same purchasing power. The rate of exchange will equalise or establish a parity between the purchasing powers of the currencies of the trading countries on their respective soils. This is what is popularly known as the absolute purchasing power parity theory. The theory is greatly associated with the name of Gustav Cassel who made it popular. Just as under a gold standard, the equilibrium rate of exchange is achieved at the point of mint par where the two sides to the rates represent the same amount of gold in them, under non-gold standards, the equilibrium rate of exchange is achieved at the point of the par of purchasing powers of the two sets of currencies indicated in the rate.

Now then, we saw above that the rate of exchange between U. S. A. and France should be 1 dollar = 80 francs, for then alone it will establish purchasing power parity. What happens if the rate is 1 dollar = 70 francs?

A man with 70 francs will obtain a dollar in exchange for his own money, purchase with this dollar a certain amount of goods from America and sell these goods at 80 francs in France, thereby making a profit of 10 francs on the transaction. (Goods worth a dollar must obviously sell at 80 francs in France for this is what we have assumed in our example). Many merchants would begin to earn profits in this manner. Naturally then the demand for dollars in terms of francs would increase and the price of dollars in terms of francs would go up too. Eventually one dollar will exchange for 80 francs. If the exchange rate is 1 dollar = 90 francs, a process opposite to that analysed above will set in tending to drive the rate at 1 dollar = 80 francs again; this time of course, the ball will be set rolling by the United States merchants, their demand for francs would increase for francs are cheaper now, till the

value of franc has risen high enough to reach the equilibrium level.

We thus see, say the supporters of the theory that the rate of exchange will be in equilibrium only when the two sides to it represent equal purchasing power. If a different rate is established, it will ultimately tend to approach the equilibrium rate. Just as fluctuations tend to correct themselves under a gold standard, they tend to correct themselves under non-gold standard conditions also. Only that whereas fluctuations under a gold standard confine themselves within the limits set by the specie points, fluctuations here do not lie limited within any definite points.

The theory of absolute purchasing power parity has been found unacceptable for the following reasons. First, it assumes that when the rate of exchange is 1 dollar = 70 francs French merchants who have spent 70 francs on a dollar and purchased American goods with it will be able to get these goods easily into France for purposes of selling them for 80 francs again. How can a house be had from the United States? The greater the number of goods of this type the less will be the chances that French merchantt would demand dollars for buying goods in America and selling them into their own country; naturally then the less also will be the rise in the value of the dollar and it may be that once disturbed the dollar may never touch 80 francs level again.

The demand for a dollar depends upon the demand for goods which can be traded with between France and the United States. As a more extended statement we would say that the demand for the currency of any country is linked up with the demand of only those goods of that country which can be and are internationally traded. And it is such goods that can influence the value of the dollar. But here too sometimes the influence is not so definite as to push up the exchange rate necessarily to the equilibrium level in the end. When the rate is 1 dollar = 70 francs, the demand for dollars may not be so great (for there may not be a large number of merchants eager to have wheat, cloth or steel from the United States) as to push up the value of a dollar to 80 francs in the end. This lack of demand might be due to the fact that there

is only a smaller number of merchants in France willing to buy and sell internationally traded goods. It might also be due to the fact that transportation charges from U. S. A. to France are so high that if goods are resold in France, they leave no margin of profit at all on the francs that were spent to buy dollars and with them the American goods.

The theory then is difficult to apply in practice. We cannot easily compare the purchasing powers of a dollar and a franc. A dollar is spent on different qualities and quantities of goods and services; and a franc on different ones. If one dollar purchases X and 80 francs purchase X_1 , how can we say that 1 dollar = 80 francs? This would be possible only when 1 dollar or 80 francs both purchase X only. In reality despite all superficial similarities, these X s would not be the same.

A second version of the theory. A second version of this theory is less pretentious. The first version—the absolute purchasing power parity theory—which claims that it can help to determine an equilibrium rate of exchange is, as our analysis shows, not satisfactory. The second version, we shall presently see, is also not quite acceptable. It does not claim much; it does not, say, for example, that it can explain an equilibrium rate of exchange; it only says that when changes take place in the purchasing power of a certain currency relative to the purchasing power of another, the equilibrium rate of exchange fluctuates in a certain manner. Thus it only explains the changes in the equilibrium rate of exchange when the price levels in the trading countries have changed relative to each other. It assumes, rather than explains the equilibrium rate of exchange.

Suppose that the equilibrium rate between India and England is 1 Re. = 1 sh-6d. Suppose also that when compared to a base period prices in India have risen four times and those in England have risen two times so that a rupee buys one-fourth and a £ one-half of what it did before. The increase of prices in India *relative to* that in England is twice the increase in the English prices. The same article which cost X rupees before would be available at $2X$ rupees now. The English merchant is clever enough not to pay $2X$ rupees;

he will so adjust his rate of exchange with India that the same number of £s which equalled X before would equal $2X$ now, so that for this change in the Indian prices he is not a loser. When the price-increase in India is double relative to the price-increase in England we see thus that the external value of the rupee in terms of £ becomes $\frac{1}{2}$ of what it was before. Rs. 2 would equal 1 sh 6d., or the rate of exchange would be 1 Re. = 9d. If the price-increase in India is three times that in England, the external value of the rupee in terms of £s will fall to one third and so on. But this implies one very important assumption--that the elasticity of the demand of the English merchant for Indian goods is unity. He spends the same number of £s as before; only that the rate now is such that when converted into rupees, these £s bring him the same articles or goods which he was buying with these £s at the earlier rate and the earlier prices.

Put in a mathematical form,

| | | | |
|--|--|--------------------------------|---|
| The present price of a rupee in terms of English currency | Exchange rate in the base period | Present British Price Index | Base Indian Price Index |
| | | Present Indian Price Index | \times Base British Price Index |

This formula can be used for evaluating any rate of exchange provided we make proper substitutions. If the equilibrium rate of exchange is 1 Re. = 18d., the base Indian price index is 100, the present Indian price index is 400, the base British price index is 100 and the present British price index is 200, we will get the present price of a rupee in terms of English currency at 1 Re. = 9d.

This version of the purchasing power theory is unacceptable for the following reasons : -

It assumes rather than explains the equilibrium rate of exchange.

Secondly, its analysis is based on price indices of individual countries in which most of the goods are those which do not enter into international trade. And we have seen above that only goods which are internationally traded have

impact on the problem of foreign exchange determination.

Thirdly, the analysis assumes that the elasticity of the demand of the foreign merchants for a country's goods is unity. This is not necessarily the case. When prices in India rise relative to those in England, the amount which English merchants are willing to spend on Indian goods can easily be different from the earlier one and the elasticity of the English demand for Indian goods would cease to be unity then.

Fourthly, just as the price-level influences the exchange rate, the exchange rate might also influence the price level. And in that situation the theory becomes absurd. When a country's currency has depreciated, an increase in exports might lead to the search of cheaper means of production and hence to lower prices.

Fifthly, the rate of exchange is determined as much by capital movements and speculative activities of those who deal in foreign currencies as by the sale and purchase of goods and services. This theory seems to assume that the rates of exchange are determined by the movements of goods and services only and of course, by the movement of their prices.

Lastly, there is an assumption in the formula above that exchange rates are determined by the movement of prices in such a manner that all go up or down in an equal degree. This, however, may not and, in fact, often times does not happen. One price may change more than another. And hence foreign expenditure on one article may be greater than on another and differently affect the exchange rate, though price change has not distributed itself equally over all articles.

The Balance of Payments Theory of Foreign Exchange.
The fundamental principle of equilibrium that we should pay no more or no less than what we receive applies to the exchange between countries as much as to that between individuals within a country. Thus if there be some country named *A* which is exchanging goods and

services with some other country named *B*, then *A* can be in equilibrium only when the payment it makes to *B* for goods and services bought from the latter is equal to what it gets from *B* for the sale of its own goods and services. It may appear that the comparison of *A*'s payment and *A*'s receipt is not possible. For *A* will pay *B* in terms of *B*'s currency and *B* will pay *A* in terms of *A*'s currency. And payments in two different currencies cannot be compared. How can for example a rupee payment in India be compared to a dollar receipt from the United States? Perhaps that is true but if we know the rate at which a rupee exchanges for a dollar we can convert dollars into rupees and then easily compare. The same is what we do when we compare *A*'s payments to *B* with *A*'s receipts from that country. We shall convert *B*'s payments to *A* or *A*'s receipts from *B* in terms of *A*'s currency and then see whether the amount which *A* pays to *B* in terms of its own currency is equal to this amount. If it is, then the rate of exchange at which we just converted *B*'s payment to *A* into *A*'s currency will be known as the equilibrium rate of exchange. It will be known as the equilibrium rate because when we converted at this rate *B*'s payment to *A* or which is the same thing, *A*'s receipt from *B* into *A*'s currency and compared it with *A*'s payment to *B* in terms of *A*'s currency we found that they were equal. And this equality is the fundamental condition of equilibrium for *A*. It is, we might say, a fundamental condition of equilibrium for any country. If payment is not equal to receipt there will be some gain or loss and hence a move towards expansion or contraction of purchases. And these latter two are characteristics of a condition of disequilibrium. So then *A* will be in equilibrium when what it pays *B* in terms of its own currency is equal to what it receives from *B* in terms of its own currency and the rate of exchange at which this happens will be known as the equilibrium rate of exchange. How are we to find this equilibrium rate? Or in other words, how is the rate of exchange at which whatever *A* pays to *B* is equal to whatever *B* pays to *A* (both amounts expressed in the currency of country *A*) determined?

Perhaps, this is what we shall do. We shall assume a certain given situation. And then after taking into account

the taste, the income, the technique of production, the size of population and a large number of similar factors which exist in the two countries respectively in that given situation we shall imagine to ourselves the demands of *A* and *B* for each other's currencies at different imaginary rates of exchange (we should not bother about the real rate of exchange in that situation). We shall only imagine that if the rate of exchange were to be this, what would *A* demand of *B* and what would *B* demand of *A*? And then if the rate of exchange were to be that, what would be their demands for each other's currency and so on? Thus thinking out a whole series of imaginary rates of exchange in that situation and then a whole series of demands of *A* and *B* for each other's currency corresponding to each imaginary rate. That is, we shall be left in this process with a schedule of hypothetical rates of exchange for that given situation and two schedules of demands—one that of demand from *A* for *B*'s currency, the other that of demand from *B* for *A*'s currency corresponding to the schedule of rates of exchange which we are left with. Now since every demand from *A* for *B*'s currency would involve payment from *A* to *B*, *A*'s schedule of demand can also give us a schedule of payments from *A* to *B*, each payment in this latter schedule corresponding to each demand in the former one. Likewise we can have a schedule of payments from *B* to *A*. So that corresponding to the schedule of rates of exchange we can have two schedules of payments, one of which *A* makes to *B*, the other of which *B* makes to *A*. It is with these schedules that we are to concern ourselves. But how will these schedules behave? Let us first look at the schedule of payments from *A* to *B* corresponding to the various imaginary rates of exchange contained in the schedule of rates of exchange referred to above. Suppose that we consider the following two rates of exchange and the payments from *A* to *B* corresponding to these rates.

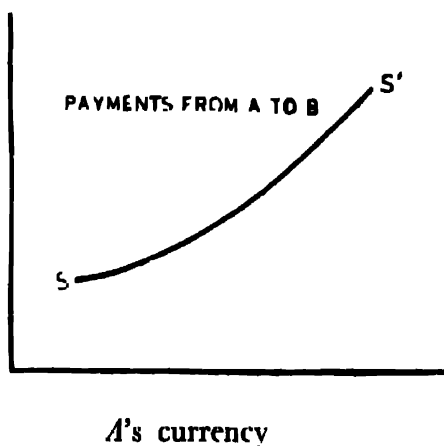
One, $1X(\text{let } X \text{ be } A\text{'s currency}) = 3Y$ (let Y be *B*'s currency) and two, $1X = 2Y$.

When the rate of exchange is $1X = 2Y$ rather than $1X = 3Y$ country *A* finds it dear to purchase currency from *B* in comparison to what it would have paid for it, if the rate of exchange had been $1X = 3Y$. For then, for $3Y$ of *B* (assuming

that there are no transport costs, though the removal of that assumption would not make any substantial difference to the argument), *A* would have paid $1X$ only. But now that the rate of exchange is supposed to be $1X=2Y$, it will have to pay $\frac{1}{2}X$. So that when the rate of exchange is such that less units of *B*'s currency exchange for the same amount of *A*'s currency or which is the same thing, when *A*'s currency has become cheaper in terms of *B*'s, *A*'s demand for *B*'s currency will decline (and therefore *A* will make smaller payments to *B*.) We can now generalise that *A*'s payments will decline when declining amounts of *B*'s currency exchange for the same amounts of *A*'s currency. The opposite will happen when increasing amounts of *B*'s currency exchange for the same amount of *A*'s currency. *A* will be making more payments to *B* for *A* will be having the currency cheaper from *B* and therefore buying more of it from *B*. That is obvious. If when the rate was $1X=2Y$ it was paying $\frac{1}{2}X$ for $3Y$ in *B* it would be paying only $1X$ now when the rate is $1X=3Y$. And it would naturally purchase more of *B*'s currency in the latter situation and make more payment.

So then we have seen how the schedule of payments from *A* to *B* will behave corresponding to the various rates of ex-

The rate of exchange or the amounts of *B*'s currency exchanging for the same amount of *A*'s

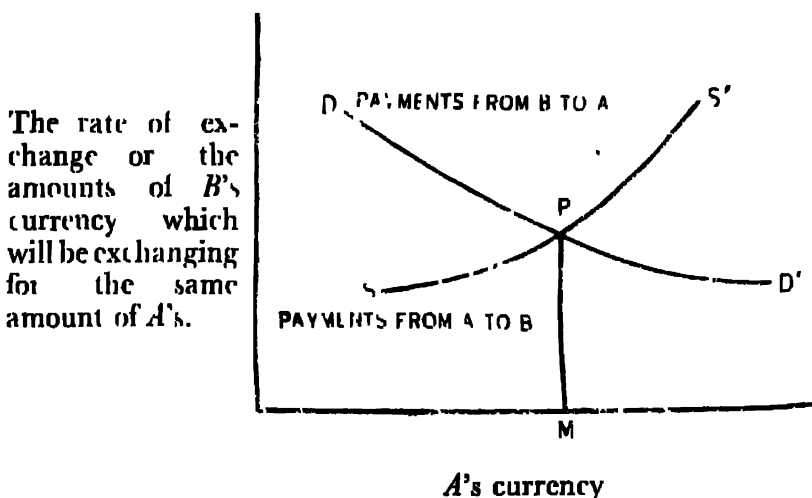


change. When the rates considered in the schedule are such that more units of *B*'s currency are exchanging for the same amount of *A*'s currency then the amounts of payments from

A to *B* which will correspond to these rates in the schedule of *A*'s payments would be greater. They will be smaller when the rates considered in the schedule are such that less units of *B*'s currency exchange for the same amount of *A*'s. From the diagrammatical point of view, we can put the picture as given above.

The x axis shows the various amounts of *A*'s currency paid to *B*. The y axis shows the various amounts of *B*'s currency exchanging for the same amount of *A*'s; it shows, we may say, the various imaginary rates of exchange between *A* and *B* or which is the same thing it shows the above mentioned schedule of hypothetical rates of exchange between *A* and *B* in the given situation for which we are working out an equilibrium rate. The curve SS' shows the increasing amounts of payments from *A* to *B* at rates of exchange at which more units of *B*'s currency are equal to the same amount of *A*'s.

What about the schedule of payments from *B* to *A*? That schedule will behave in a manner opposite to the behaviour of *A*'s schedule of payments. When less units of *B*'s currency exchange for the same amount of *A*'s currency, *B* will find it cheaper to purchase currency from *A*. For then, for 1 X in *A* (assuming no transport costs, *B* will be paying 2 Y only



whereas it would have paid 3 Y if the rate of exchange would

have been $1X=3Y$ and more units of B 's currency would have been exchanging for the same amount of A 's. So then the schedule of payments from B to A corresponding to the schedule of rates of exchange will indicate increasing payments from B to A if the rates show that less and less units of B are exchanging for the same amount of A 's currency, and decreasing payments from B to A if the rates show that more and more units of B are exchanging for the same amount of A 's currency. If we bring forward the diagram given above and show B 's schedule of payments also alongside with A 's, the picture will be as given above.

DD shows greater payments from B to A in terms of A 's currency as rate of exchange shows decreasing amounts of B 's currency being equal to the same amount of A 's currency.

Now from this picture of the schedules of payments of A and B with respect to each other, corresponding to a schedule of rates of exchange shown on the Y axis, it becomes clear at once that in the situation for which we have thought out this whole picture (in the background of certain given taste and income and population etc. of the two countries) A will be in equilibrium at the point P for here it will be that whatever it would be paying to B will be equal to whatever B will be paying to it. And the rate of exchange given by point P will be the equilibrium rate. It would, as is obvious, be such that PM amount of B 's currency exchanges for one unit of A 's currency. So the equilibrium rate of exchange for the situation which was given to us or with which we started should be PM amount of B 's currency 1 unit of A 's currency. This rate of exchange it must be clearly borne in mind need not actually exist in that situation. It is just the rate of exchange which should exist if A is to be in equilibrium in the given situation.

But what is this point P which determines the equilibrium rate of exchange? As the diagram shows it is the point of intersection of the curves DD' and SS' . And these curves represent schedules of payments from A to B and from B to A respectively. So that we can say that the equilibrium rate of exchange has been determined by the intersection of the schedules of payments of A and B with respect to each other.

Now since payments from *A* to *B* and payments from *B* to *A* are balancing each other at the point *P*, we can say that the equilibrium rate of exchange is determined by the balance of payments. Hence the name of the entire of the above analysis as the Balance of Payments Theory of foreign exchanges.

But it should be carefully kept in mind that when the theory states that the rate of exchange is determined by balance of payments, it refers to a whole schedule of hypothetical or imagined payments, not to the actual or real payments being made in the given situation. It is unfortunate that some critics of this theory chose to put this wrong interpretation upon the statement of the theory and then said that it was unacceptable.

We cannot reject this theory unless we reject the general theory of value in Economics, the familiar theory of supply and demand. For if we care to look to that, this theory is a supply and demand theory of foreign exchange and many economists have even given it that name. After all what are these schedules of payments from *A* to *B* and from *B* to *A* except schedules of supply of *A*'s currency in exchange for *B*'s and demand of *A*'s currency in exchange for *B*'s? A payment from *A* to *B* would imply that *A* is making its own currency available so that it might be exchanged into *B*'s currency and then *B* might be paid off. Naturally *B* would like to be paid in terms of its own currency. So that every payment from *A* would involve some supply of *A*'s currency to be exchanged for *B*'s. And every payment from *B* would involve some supply of *B*'s currency to be exchanged for *A*'s or which is the same thing some demand for *A*'s currency in exchange for some supply of *B*'s currency. Thus the schedule of payments from *A* to *B* can be replaced by the schedule of supplies of *A*'s currency in exchange for *B*'s and the schedule of payments from *B* to *A* can be replaced by the schedule of demands of *A*'s currency in exchange for *B*'s. And instead of stating that the rate of exchange is determined by the intersection of the schedules of payments of *A* and *B* with respect to each other, we might as well make the statement that the rate of exchange is determined by the intersection of the schedule of supplies of *B*'s currency in exchange for *B*'s and the schedule

of demands for *A*'s currency in exchange for *B*'s and we would convey the same meaning. What difference is there between this statement and the familiar statement made in economic theory that value of a thing is determined by the intersection of supply and demand schedules? The rate of exchange which shows how much of *B*'s currency would exchange for 1 unit of *A*'s is nothing but a value of one unit of *A*'s currency in terms of *B*'s. And the theory in effect makes the statement that the equilibrium value of *A*'s currency (in terms of *B*'s) is determined by the supply of and the demand for *A*'s currency in exchange for *B*'s. It is like saying that the value of 1 seer of wheat (assuming a seer to be a unit of weight) in terms of rupees is determined by the supply of and demand for wheat in exchange for rupees. If the statement about the value of wheat is correct, the statement about the value of *A*'s currency must also be correct for both the statements are identical in substance.

But here again supply and demand are to be understood in the hypothetical and schedule sense and not in the sense of amounts actually supplied and demanded. In the latter sense supply and demand are always equal for whatever has been supplied must be equal to whatever has been demanded. The criticism of our theory that supply and demand are always equal and therefore they cannot determine the rate of exchange arises out of misunderstanding supply and demand to mean the amounts already supplied and demanded. But as has just been pointed out above, that is a wrong sense in which to understand them. Supply and demand are referred to here, as they are referred to anywhere in Economics, in the hypothetical and schedule sense and the theory which stands on them cannot fall unless we question the statement of the general theory of value itself.

PART VIII
Credit and Banking

CREDIT AND CREDIT INSTRUMENTS

None, but 'currency banks', attaches to currency at present that supreme importance which, a century ago, it was imbued with. So vast and sweeping have been the changes which our world has witnessed in recent years that currency has now become simply 'the small change' of credit. Banks, not governments, are now the principal creators of money. No doubt, the national government still declares, and ordinarily issues, the standard money and fractional currency of a country but it delegates to the central and commercial banks the right to issue the chief kinds of money. No doubt, we still continue to purchase cinema tickets and our daily supplies of commodities like fruits and vegetables with currency but their value is only a small fraction of the amount for which securities and other commodities are daily bought (specially in the wholesale market) on credit with credit instruments which are simply written evidences of antecedent credit transactions. These important sinews of modern trade and industry—credit, evidences of credit and creators of credit—form the subject matter of this chapter.

Definition and nature of credit. In ordinary language, credit (derived from the word 'credere' which means 'to trust') connotes simply faith, belief or trust, but in Economics this word is used in a technical sense to denote the ability of a person to infuse in another person that confidence in his ability to pay and in his honesty which enables him to obtain from this other person a thing of value such as goods, services, money, or good-will, without making an immediate payment of its equivalent, by simply making a promise to pay the same at some future date. The credit of a person is measured by the amount which he can borrow from others. From the lender's point of view, it is a right to receive payment, and from the borrower's point of view, it is an obligation to make payment on demand or at some future date on account of the transfer of goods, services, money or good-will to him at the present time. In other words, what is debt from the debtor's point of view is credit from the creditor's point of

view. When a banker says that he has allowed a credit for rupees five lacs, he signifies that he has a right to receive this amount from his debtor. On the other hand, when a businessman says that he has obtained a credit for rupees one lac, he expresses his indebtedness to that extent. Credit is, in a sense, a lending operation, involving postponed payment, or a protracted exchange. In other words it is a transfer of value involving the return of its equivalent in terms of money in future. In daily life, it may appear in any of its two usual forms of credit sales and loans of money.

Is credit capital? In the words of Ricardo, "Credit is the means, which is alternatively transferred from one (owner) to another, to make use of capital actually existing; it does not create capital; it determines only by whom that capital shall be employed." According to J. S. Mill "Credit being only the permission to use the capital of another person, the means of production cannot be increased by it, but only transferred."

Credit, no doubt, enables capital to flow from a person who owns it to another who can put it to a more profitable use, and, therefore, it increases the productivity of capital.

Does the creation of credit, then, ultimately result in the creation of additional capital goods or wealth? Generally speaking, it does this only indirectly through a rise in price (which reduces consumption and stimulates production) and directly where credit draws out hoarded wealth for being employed productively. Fresh capital goods are then created and the volume of capital available in the community is increased. But credit can increase pure capital too besides increasing capital goods, for, a credit instrument serves the same purpose as cash. It adds to the supply of purchasing power available to the people and thereby directly increases the quantity of capital.

Distinction between credit and credit instruments. Credit, we have seen, is an abstract thing or a belief which results in lending something of value or in an arrangement for deferred payment, but credit instruments are the tangible and visible written evidences of antecedent credit transactions. They are written promises to pay a specific sum of money on

demand or on some future date. They take several forms, such as cheques, drafts, *hundies*, promissory notes, postal orders and money orders. These credit instruments, not credit itself, serve as important media of exchange and influence the price level.

Essentials of credit. Confidence, amount and time are three essential elements of credit. (1) An essential part of a credit transaction is the transfer of goods to the borrower on an obligation to return an equivalent value (not the identical goods themselves) in the future. Without such a transfer of value from one person to another, the question of postponement of payment and granting of credit does not arise. Before allowing such a transfer of value, the lender must have confidence in (i) the ability of the borrower to pay and (ii) his intention to pay. The confidence which forms the basis of all credit is based on the value of the property which the borrower possesses or is likely to possess and on the character of the borrower himself and of his business. For assessing the customer's character bankers investigate into (a) his personal habits, extent of his addiction to drinking and gambling, his own and his wife's style of living, his social ambitions and his religious affiliations, (b) his age and general experience, his intelligence, commonsense and shrewdness, his reputation for ability as judged by the extent of his success in his own business and side-businesses, (c) his past record for honest dealings. Bankers form an idea of the character of a customer's business by taking into consideration (i) the ratio of quick assets to current liabilities, (ii) the amount of capital invested in the business and the proportion which is self-owned, (iii), the character of goods stocked, (iv) the rate of turn-over of stock, (v) the location of the business and the extent of competition which the business has to face there and (vi) the sum for which the business-house is insured.

(2) Moreover, the debtor's obligation should be capable of being expressed as a definite amount of money. The credit position of one person differs from that of another person, and various persons enjoy credit up to varying amounts.

(3) The element of time is an essential ingredient of every credit transaction. This element is introduced whenever

payment is postponed and credit is allowed to a customer. With an immediate payment, the transaction becomes a cash transaction. Moreover, credit is allowed by a shopkeeper or a banker to different persons for varying periods of time up to which it may be considered safe to lend to each of them.

Functions of credit. The chief function of credit is to transfer capital from those who possess it but are unable to use it profitably to the persons who expect to make a more profitable use of it. Credit enables banks to collect balances from numerous depositors scattered over a wide area and provide capital to producers and traders.

A secondary function of credit which has assumed so much importance today is to permit the exchange of commodities without the intervention of legal tender money or to economise the use of currency by substituting a cheap medium of exchange for a more expensive and less convenient one. It also fills the gap which the insufficiency of currency to meet the demands of modern expanding trade and industry creates in our industrial society. Moreover, by allowing payments to be deferred till it is convenient to the borrower to make them, credit provides a valuable facility to the debtor. It should also serve, in skillful hands, as an instrument for promoting industry and economic progress in a country.

Reasons for the use of credit instruments. By allowing credit judiciously to customers sales are pushed up and the margin of profits is widened. But, before granting credit, searching and detailed enquiries into the character of the borrower and his business are made.

The seller of goods accepts a credit instrument from his customer in payment for his goods, first, because he has confidence in the person who has given it, believing that, when he demands the promised money, he will surely get it, and secondly because, on the strength of such promises made to him, he can, in his own turn, make similar promises to others in payment for the goods purchased by him.

Further they facilitate and cheapen the cost of transmission of funds from one place to another.

Incidental advantages of credit. Credit enables governments to excavate a Panama Canal or to wage a global war of aggression or self-defence, or to construct a Grand Trunk Road, or a skyscraper or a trans-continental railway line. In short, things which could not have been accomplished without the possession of huge funds are made possible by an extensive and developed system of credit.

Individuals too are enabled by credit to surmount temporary financial difficulties. Credit makes it possible for them to satisfy their wants pending the receipt of a sufficient income, to purchase a home before the entire purchase money is in hand, or to acquire education with borrowed funds.

Credit enables brainy businessmen with very little money in their pockets to embark upon gigantic enterprises. Thus credit makes it possible for national resources to be utilised most effectively.

Moreover, credit has helped the growth of large scale production and of specialisation in the present day industrial society, and has made it possible to vary the scale of production to suit changes in demand. Without credit our industrial society could not have emerged from the medieval household economy and adopted the twentieth century capitalistic system of production.

Credit mobilises wealth lying in small quantities in the possession of a large number of persons to form a large mass of capital which by being employed productively increases the material means of enjoyment in a country.

A careful control and regulation of credit minimises price fluctuations and leads to stability in trade and industry.

Credit has helped invention, progress, development and industry. The great gain accruing from the use of credit cannot be overestimated. A great economist has aptly remarked that credit has done more to enrich nations than all the gold mines of the world put together.

Dangers of credit. Though the advantages of credit are

many, yet it has a few latent dangers which cannot be ignored.

History furnishes numerous instances to show that credit is liable at times to be over-issued. In many parts of the world people have today become painfully aware of the evil consequences which flow from an over-issue of notes, resulting in inflation and an abnormal rise in the cost of living. Similarly, an over-issue of loans encourages excessive speculation and results ultimately in over-production.

At times an enormous superstructure of credit is, in periods of optimism, built upon a dangerously slender foundation of cash. A slight adverse breeze may then become quite sufficient to pull down this weak superstructure and plunge the whole community in a financial crisis and subsequent depression.

Credit facilities available in a community may sometimes enable an inefficient entrepreneur to continue, with the help of borrowed funds, a losing business long enough to precipitate ultimately a big crash which may prove ruinous to a large number of persons. His limited personal resources could never have allowed his inefficiency to have so great a scope for inflicting financial losses on others.

The extensive system of credit which pervades the modern industrial society makes possible the procurement and control of so much capital by a person that competition is killed and a monopolistic control over the industry is ultimately established, with the result that labour is exploited and consumers are fleeced by being charged abnormally high prices.

Easy credit has permitted States and individuals to indulge in wasteful expenditure which characterises the economic life of every land today.

Kinds of credit. If we focussed our attention on the borrower, credit may be divided into six classes.

(1) *Public credit.* It denotes the confidence which people have in the ability and willingness of a public body to redeem its financial obligations. In other words, it means

the borrowing capacity of a public body as is reflected by the amount of loan it can get and the rate of interest it has to pay. It embraces all borrowing operations of governments (central, provincial and local) or their promises to pay in the future in return for goods acquired in the present. As their current incomes cannot suffice for the construction of a Sarda Canal or a Shikarpur--Ballia railway line, loans have to be floated in the shape of interest-bearing bonds and securities. Their sales at a discount denotes, generally speaking, a fall in public credit. Some writers use this term to signify the general credit of individuals in a nation.

(2) Industrial or corporation or capital credit provides producers fixed capital for their industrial operations. In our society it appears in the shape of bonds or stocks or long-term loans which provide funds for starting or developing industrial ventures.

(3) Mercantile or commercial credit is used by producers, wholesalers, retailers and commission agents etc. to provide themselves with the working capital which they require for the manufacture or movement of goods from the original producer to the ultimate consumer. It manifests itself as short term loans which are raised by means of commercial promissory notes and bills of exchange.

(4) Agricultural Credit is employed by agriculturists to provide themselves with fixed capital for long periods and working capital for short periods of time.

(5) Personal, individual, consumption, retail or book credit enables an individual to run up an account and procure consumption goods (without making an immediate cash payment) on the monthly bill system or the instalment plan. The recognised earning capacity of the borrower forms the basis of such credit. No collateral security or written promise to pay is demanded from the borrower. In case the debtor defaults the creditor has the right to take back his goods.

(6) Banking credit. In issuing bank notes and opening current and time accounts banks employ this kind of credit to borrow money from the public. Banker's acceptances, letters

of credit and debentures too belong to this category. In other words, bank credit consists of simple debts due from banks. A customer makes his banker his debtor by transferring to him his credits out of which he assigns to his creditors sums due to him from his banker. Such debts as are due from a bank to its customers and are intended to be transferred to the depositor's creditors by means of cheques are known as bank credits.

Yet another division. If we consider the uses to which the borrowed funds are put and the means by which the obligations thus created are to be met at maturity, credit may be again divided into three classes—investment credit, commercial credit and consumers' credit.

(1) Investment credit is used for the development and maintenance of industrial enterprises like railways, factories, workshops, farms, mines etc. It supplies fixed capital and is raised as long term loans through long dated paper.

(2) Commercial credit provides working capital to producers and traders for financing the production and marketing of goods. It takes the shape of short term loans and is raised by means of promissory notes and bills of exchange.

(3) Consumption credit is used by individuals to provide them with consumption goods. It is based on the size and sources of the borrower's income.

Mercantile or commercial credit and capital or investment or industrial credit. The distinction between these two kinds of credit rests on the uses to which the borrowed capital is put and on the time which intervenes between borrowing and repaying. Commercial credit gives working capital for obtaining labour supplies and materials needed for producing and marketing goods, whereas industrial credit gives fixed capital for building factories and equipping them with machines, plants, buildings etc.

Commercial credit takes the shape of short term loans, whereas industrial credit manifests itself in the form of long term loans.

Factors influencing volume of credit in a country. Trade and industrial conditions at home and abroad influence the volume of credit available in a country in a large measure. Brisk trade and industrial activity create a feeling of optimism and make credit abundant, but when business activity is depressed, credit also contracts. Wars and expectations of wars too contract credit. Similar is the effect of a public announcement of the intention of the existing government to inflate the currency. Political changes too disturb the volume of credit in a country. Expectations of assumption of power by a party whose election manifesto promises a capital levy are sure to curtail credit.

Speculation increases the demand for credit and leads to its extension to a certain limit, but it is also, in its turn, influenced by the availability of credit in the community.

The state of a country's currency is an important determinant of the volume of credit available in it. If a country's currency is sound enough to infuse confidence in the public mind in its stability and to allow bankers to maintain a low ratio of cash to their deposit liabilities, credit will expand. If it is otherwise, contraction of credit may reasonably be expected. Movement of gold to, or from, a country also affects the availability of credit, so long as an effective gold standard is functioning in the country. With an inflow of gold, the gold holding of the central bank improves, the bank rate is lowered and credit expands. An out-flow of gold produces the reverse effect of contracting credit in the country.

Factors influencing development of credit. Business morality has exercised an important influence on the development of credit in the world. If on demand the creditor is able to receive prompt payment and has not to take the help of a court of law for enforcing his claim, trust is engendered and credit flourishes. Trust makes the written promise of a stranger as good as gold and attracts goods from one corner of the globe to another without insistence on payment to accompany the transference of goods.

A stable standard for deferred payments has also been a powerful factor which has influenced the development of credit and made creditors postpone their demands for repayment.

Moreover, the growing security of private property and evolution of the legal system so designed as to fully safeguard individual rights and to enforce a prompt fulfilment of contracts, have been potent factors working in the same direction.

CREDIT INSTRUMENTS

To us in India credit has been known from times immemorial. In ancient India, the word of the people was as good as their bond. Hence credit instruments appeared in India long after people had become familiar with the uses of credit. We have definite proofs that these instruments existed in a developed form among ancient Greeks and Romans and Babylonians. In U. S. A. credit instruments account for the transaction of nearly 50 to 60 per cent of retail trade and over 90 per cent of the wholesale trade. At present a great part of credit is evidenced by mere entries in account books and is known as book credit. A sale on credit by a shopkeeper or a loan granted by a banker may be evidenced simply by an entry in the books of the shopkeeper or of the banker and may have no written promise signed by the borrower to prove it. Even then the shopkeeper or the banker has as good a right of action and the borrower has as legal a liability to pay as if he had executed a written document. All over the world credit is transferred by book entries without impairing in the least the legal or moral obligation of the debtor to pay. Such transfers are most common in the clearing houses and stock exchanges. Bonds and debentures too are used by individuals and joint stock companies for obtaining considerable amounts of capital. But, as all of them (except debentures to bearer) lack negotiability and are generally not acceptable substitutes for money, we shall defer their study to a later stage. (By negotiability is meant the quality of a credit instrument because of which it can be transferred to another person in such a way that the transferee becomes the legal holder thereof and vested with all the rights of the original holder. Its bona-fide purchaser for value without notice of defect in its title comes to possess a better title to it than the original holder of the instrument with a flaw in it. In this respect credit instruments differ from other commodities and resemble money. An innocent person honestly receiving coins, notes, bills and cheques from a thief acquires legally a perfect title to them.

Bills and cheques are divested of this quality by writing the word "not negotiable" across their face. It is because of this characteristic of negotiability possessed by commercial credit instruments that they serve as means of payment and substitutes for money.) Instruments of credit in India are governed by the Negotiable Instruments Act of India. According to this Act, a negotiable instrument is a written instrument or evidence of debt which may be transferred by one person to another by endorsement or delivery so that the legal title to it becomes vested in the transferee.

(Endorsement means the assignment of the sum due under the credit instrument by the payee to a new payee by writing and signing on the back of the instrument a direction to pay to the latter. If the payee endorses an instrument with his signature without naming another payee, it becomes payable to bearer.)

Essentials of a negotiable instrument. A negotiable instrument must be (a) in writing, (b) properly signed, (c) negotiable in form (i.e. payable to order or bearer), (d) payable in legal tender money only, (e) certain in amount, (f) payable to a designated payee, (g) payable absolutely (not conditionally), and (h) payable at a time that is certain.

Distinction between money and credit instruments. In the wider sense of the word, money includes credit. In the narrower sense in which it is generally used, it includes only those forms of it which are (1) generally acceptable in the community. A piece of money given by the buyer of a commodity to its seller is accepted by him on account of the fact that others also would accept that piece of money from him in exchange for goods they sell to him. A credit instrument like a *hundi* is only *specialty* acceptable. A seller of goods would accept it only when he has full confidence that the promise made in the *hundi* is going to be honoured. A third party would accept it only if he believed in the solvency and probity of the original drawer of the *hundi*. Unlike money, credit instruments are never in general circulation but at best they enjoy only a *restricted circulation*. A credit instrument, therefore, effects only a fewer number of exchanges than a piece of money.

(2) The laws of the land do not oblige a creditor to accept a credit instrument in discharge of his obligation from his debtor but the same creditor cannot refuse the legal tender money. In other words, credit instruments are not generally unlimited legal tender like some forms of money.

(3) A credit instrument is a substitute for money, not money itself. It is simply a promise to pay money and this written promise circulates only within the limited circle in which the financial soundness of the parties is known.

Kinds of credit instruments. Every industry needs both fixed capital and working capital (although in varying proportions). The instruments used for providing working capital are known as commercial credit instruments and those used for raising fixed capital are called investment credit instruments.

If we focussed our attention on their outward forms alone, commercial credit instruments might be placed in two main categories: (a) promissory notes and (b) bills of exchange, including cheques and drafts. But if we took into consideration their functions they could be grouped in a different way in two classes of (a) promissory notes and bills of exchange which promise payment in the future and which are therefore used as a means of borrowing and (b) cheques and banks notes which, like money, are used as a means of payment only, not of borrowing and lending.

A promissory note is an unconditional written promise by *X* (the maker) to pay either on demand or on a definite future date a specific sum of money to *Y* (the payee) or to *Y*'s order or to bearer. It may not contain the name of the place of payment. It may be issued by individuals, institutions or governments. There are always two parties to a promissory note: (a) the maker or the person who promises to pay and (b) the payee or the person to whom payment has to be made. If the payee is the bearer of the note, the debt due under it can be transferred by simple delivery of the note to the person to whom payment may be desired to be made. If, in a note, after the payee's name the words "or order" occur, the payee is granted the right to transfer his claim to another person by naming him, and writing a direction to that effect, and then signing his name, on the back of the note. Thus, the

note has been endorsed by the payee in favour of another person who becomes the new payee entitled to receive payment of the sum due under the note. Promissory notes of banks payable to bearer on demand are called bank notes. Promissory notes issued by governments and central banks are declared legal tender and thus become money. In some cases the legal tender notes of central banks and governments are not in the form of promissory notes but state simply the amount for which they are to serve as means of payment. A note under which only one person is responsible for payment is known as a single name paper whereas a note with two or three signatures or makers is called a double-name or three-name paper. All promissory notes (except bank notes and currency notes) have to be drawn on properly stamped paper.

Specimen of a promissory note.

Rs. 500/- Allahabad, December 1, 1948.

Stamp.

Three months after date I promise to pay Shri Ghonchooji or order the sum of Rupees five hundred only for value received.

Bhondumal.

A bill of exchange is an unconditionally written order, signed by a creditor *X* (the drawer) ordering his debtor *Z* (the drawee) to pay, either on demand or at a definite future date, a specified sum of money to *Y* (the payee) or to *Y*'s order or to bearer. The drawee may indicate his willingness to honour it by signing his name under the word 'accepted' written across the face of the bill. The sum due under an accepted bill is a legal liability of the acceptor, guaranteed by the drawer and also by the intermediate holders who have endorsed it. Such a bill is readily discounted by banks. Generally, a bill of exchange has three parties to it—the drawer, the drawee and the payee but when the payee is the same person as the drawer, it has only two parties to it. The seller of goods who draws a bill on the buyer makes it payable to his own banker who will arrange to have the bill accepted by the buyer and paid by him on maturity (or get the sum due under the bill

'collected' from the debtor). The seller need not wait till the time of collection of the bill to receive his money. If he has created sufficient confidence in his banker he may get the bill discounted by his bank and receive its present worth. In discounting the bill the banker has, in effect, lent the amount of its present worth to the seller.

Bills of exchange belong to two broad classes. (1) Sight or demand bills which are payable on demand like our *Darshan hundies*, and time or usance bills which are payable after a specified period of time like our *muddati hundies*. (According to Dr. L. C. Jain *hundies* may sometimes be conditional orders to pay and may, therefore, differ in this respect from bills of exchange). Bills of exchange may again be divided into (a) inland bills and b) foreign bills

Inland bills are those that are drawn or made in India and made payable in, or drawn upon, any person resident therein. Other bills that do not answer this description are termed as foreign bills.

Specimen of an internal bill of exchange

Allahabad.

Stamp. Rs. 1000.

December 2, 1948.

Two months after sight, pay to the Editor of the 'Leader' or order the sum of Rupees one thousand only for value received.

Ram Nath Ghose

To

The Editor,
The Pioneer,
Lucknow.

Foreign bills are a great help to traders. They save all the trouble, expense and time which are involved in shipping specie from one country to another. In the following specimen an Allahabad creditor has ordered his debtor in Philadelphia (U. S. A.)

to make payment to his American creditor Mr. J. J. Thompson. In this way cross-shipment of funds between India and U. S. A. has been avoided. If the Indian creditor has no debt to discharge in America he may sell his bill to another Indian who has to make payment in U. S. A. Suppose Lala Ram Narain Lal has to pay 100 dollars to the Macmillan Co. of New York. He will then purchase this bill from Mr. E. V. Joseph of Allahabad and send it to his creditor—the Macmillan Co. of New York—who will realise this amount from Mr. Clark Warburton of Philadelphia. In this way accounts have been cleared off without the transmission of actual money from either country. In international trade between two countries, mutual indebtednesses are offset against each other and it is only the balance that has to be liquidated by shipment of specie or bullion.

Specimen of a foreign bill of exchange

100 dollars.

Allahabad,
December 2, 1948

Two months after sight of this first of exchange (second and third remaining unpaid) pay to Mr. J. J. Thompson or order one hundred dollars for value received and place the same to account as advised.

To

Clark Warburton,
Philadelphia.

E. V. Joseph.

Bankers' or finance bills, commercial or trade bills or trade drafts or trade acceptances, and accommodation bills are a few other well-known types of bills.

Bankers' or finance bills are used merely as a means of making payments and transferring balances and are secured by the reputation of the bank that draws them.

A commercial or trade bill or trade draft or trade acceptance arises out of an actual sale of goods and is secured not only by the general responsibility of the drawer, but also by the bill of lading or warehouse receipt representing the goods

which have been exchanged for the purpose of sale. It is an order drawn by a seller of goods against the buyer of those goods and accepted by the latter. Documents of title accompanying a bill serve as collateral security and provide additional security for the debt.

Accommodation bills or drafts are those bills which do not arise out of any business transaction already concluded, though there may be an intention to purchase goods with the funds thus procured. Such bills are generally drawn, accepted and endorsed without any value having been given.

Cheques. A cheque is a depositor's order to his bank to pay on demand a specified sum of money to himself or to another person or to his nominee or to the bearer of the cheque. Thus a cheque is simply a demand bill of exchange drawn by a depositor on his bank. Depositors in the current account (and in some banks in the Savings Bank account too) enjoy this right of drawing cheques on their banks. A cheque has also the same three parties as a bill of exchange, namely, the drawer, the drawee and the payee. Cheques may be bearer cheques, or order cheques and may be crossed or uncrossed, negotiable or not negotiable.

A bearer cheque, as the name implies, is made payable to the person who presents it for encashment to the bank on which it has been drawn. The paying bank is under no legal obligation to ensure that payment is made to the very person whom the drawer wanted to pay. A chance finder of such a cheque may encash it, still the paying bank will not be held responsible for making a wrong payment. It does not need any endorsement for its valid transference.

An order cheque is made payable to a certain person or order, i.e., to another person in whose favour the payer endorses the cheque. In the case of such a cheque the bank has to see that payment is made to the right person. If, through the bank's negligence, it is encashed by someone else the bank will be held liable to make good this loss. At the time of transferring it to another person, it is necessary to endorse it, in favour of the person who is intended to receive payment under it.

Specimen of a bearer cheque

No. C 6543.

Allahabad. May 16, 1948.

Imperial Bank of India
Allahabad.

Pay to Mr. Raghunath Prasad or bearer Rupees five thousand only.

Rs. 5000/-

Ram Dulare

A crossed cheque is one across the face of which two parallel lines with, or without, the words 'A/C' or "&Co" have been drawn. The drawee bank pays the amount of such a cheque only to a bank. Crossing is simply a device to make the transmission of cheques from one place or person to another reasonably safe and to minimise chances of wrong payment.

Bank Drafts— A bank draft is an order by a bank to its own branch or to another bank in or outside, the country to pay a certain sum of money to a specified person or to his order or to bearer. Like bills of exchange, drafts too may be inland or foreign instruments. Bank drafts are used to minimise the cost of remitting funds to distant places.

Distinction between a bill of exchange, a cheque and a bank draft. Of a bill of exchange, both the drawer and the drawee are individuals, whereas if the drawer is an individual and the drawee is a bank, the instrument becomes a cheque. In the case of a bank draft, both the drawer and the drawee are banks. The payee in each case may be either an individual or an institution.

Uses of commercial credit instruments. These credit instruments economise the use of metallic money and provide a very convenient medium of exchange. They enable payments to be deferred until it is convenient for the promisor to make them and consequently reduce his difficulty and hardship. They stimulate production by enabling producers to spend in anticipation of receiving the sale proceeds of their produce.

The system of payment by cheques is very safe and convenient. The counterfoils of the cheque-book serve as a record of various payments made by the holder of the cheque-book. Moreover, the system obviates the necessity of keeping large sums of money in one's home. The holder of the cheque book has, therefore, very little to fear from thieves. Cheques economise the use of legal tender money in a country and enable payments to be made conveniently over long distances. They constitute also a convenient form in which payments may safely be received.

SPECIMEN OF A *dahani* HUNDI.

Shri sidh Cawnpore shubhasthan shri patri bhai Ram Lal Har Narain jog likhi Pragjic Ram Nath Chhandu Lal ki Ram Ram banchana. Age hundi kita ek ap upar kia rupia 500 ankan panch sau ke nime do sau pachas ke doone poore dena. Yahan rakha bhai Imperial Bank of India, Allahabad vale ke miti Katik sudi teras se pahuncha dam dhani jog bina jabta rupia bajar chalan hundi ki rit thekane lagave dam chaukas kar dena miti Kuar sudi teras Samvat 1978.

SPECIMEN OF A *muddati* HUNDI OR USANCE BILL.

Sidh Shri Indore maha subh sutank bhai Ala Baklish Madho Lal likhe Ujjan se Ram Bihari Lal ka Ram Ram banchna. Apprach hundi 1 rupia 2,500 aukie pachis sau jiska nima rupia sarhe barah sau ka duma pura athe rakha. The Bank of Indore Limited pas miti Bhadwa sudi 8 se dinco sath piche name sah Jog hundi chalan Kaldar dija, miti-Bhadwa sudi 8 Samvat 1978.

N. B. The statement of half the amount payable is inserted so as to make fraudulent alteration difficult.

Investment credit instruments. These instruments are used for procuring fixed capital by industries. They may be conveniently classed as (a) bonds and debentures, (b) stocks and shares, (c) short term notes and (d) stock holders' rights.

(a) Bonds and debentures are instruments by means of which joint stock companies and governments obtain long term

loans. These instruments represent debts and, therefore, their holders are creditors. Bonds which are payable to bearer or are transferable by endorsement are as much credit instruments as bills and notes. Interest coupons attached to bonds are torn off when due and presented for encashment like cheques. They are considered safer investments than stocks and shares but much of their safety depends on the terms of these bonds and of the trust deed which secures or ought to secure, them. If the debtor does not regularly pay interest on them, trustees may, with the help of a court of law, have the debtor's property seized and sold 'lock, stock and barrel.' Even though no such fear exists in the minds of governments and municipalities, they are always careful to honour their bonds because they know that, if they played false to one set of creditors, they would find it extremely difficult to discover another. Of course the position of the creditor of a rotten company or of an impecunious state can never be as safe as that of the share-holder of a sound company. Bonds and debentures carry a fixed rate of interest and even if a company earns fabulously high profits, bond holders get only their pound of flesh.

(b) Stocks and shares represent the capital of a joint stock company and are placed on its liabilities side by a company. Although stock holders and share holders are proprietors of their company, yet purchasers of stocks or shares and bonds or debentures treat them alike, as is evident from their question 'Shall I invest in bonds or stocks or shares?'

(c) Short-term notes are employed for raising fixed capital and usually run from one to five years. They are generally secured only by the income of the company. They are issued to meet temporary emergencies. In periods of tight money or of general uncertainty about the future of the industry, it is difficult to sell long-term bonds. At a more propitious moment they are converted into long term bonds. Now-a-days they are generally used to provide funds for a new construction, if the debt can be paid off in a short time. Their claim on the company's income ranks after that of bonds.

(d) Stock-holders' privileges to subscribe to a new issue of shares (floated by their company in proportion to the amount

their of existing holdings of shares are issued to them in the form of transferable instruments. These rights are bought and sold on the market at prices which roughly represent the difference between the issue price of the new stock and its prospective market price.

CHAPTER L

BANKS—THEIR FUNCTIONS AND CLASSIFICATION

What is a bank? In answering this question the Indian Central Banking Enquiry Committee of 1931 could do no better than say that "the task of defining the term 'bank' or 'banker' which has been regarded as well-nigh impossible in other countries is much more so in India where a definition cannot be drawn up without excluding many firms of indigenous bankers and individuals who do a considerable portion of the financing of the country". The British Parliament too had to content itself by defining a bank as "any firm or institution doing a *bona fide* banking business". So diverse are the functions of a bank in the modern world that no succinct definition has yet been framed. The Hilton Young Commission, 1926, proposed that "the term bank or banker should be interpreted as meaning every person, firm or company using in its description or title 'bank' or 'banking' and every company accepting deposits of money subject to withdrawal by cheque, draft or order". In 1945 the proposed Banking Companies Act defined banking as "accepting of deposits repayable on demand." According to Sayers, "a bank is an institution whose debts are widely accepted in settlement of other people's debts to each other." In other words, a bank is an institution which receives deposits of money or of credit and which seeks profit through the extension or sale of its own credit. In the words of Crowther "a banker is a dealer in debts —his own and other people's".

The banker's chief business — "The banker's business is, then, to take the debts of other people, to offer his own in exchange and thereby to 'create money'.....The bank does not 'create money out of thin air, it transmutes other forms of wealth into money.....He (a banker) can turn immobile wealth into the mobile (or 'liquid') form of wealth known as money. He takes the immobile wealth as asset and gives his IOU (which is money) in exchange. This is the very essence of the banker's business" (Crowther). A bank acts as an intermediary, receiving on deposit the savings of one set of people and granting loans to another. In every community

there are a number of persons who spend less than they earn. Hence it is a major problem to them how to keep their savings safely. Banks undertake the safe custody of these savings. Their past experience has shown that only a small fraction (say 10 per cent) of these deposits is sought to be withdrawn at any time. The remaining portion of these deposits could, therefore, be lent out by them and an income earned by charging interest from borrowers at a rate higher than what they allow to their depositors. The lure of an additional income by way of interest is sufficient to tempt depositors to save as much as they can and to leave their savings on deposit with banks. This capacity of banks to lend the major portion of deposits received from their customers enables banks to 'create' money and, thereby, influence the price level.

How do banks create money? Banks create credit in two ways: first, by issuing notes, and second, by advancing loans to businessmen and creating deposits in their favour.

When a bank issues notes, it has to keep an adequate reserve against its liability created by the issue of these bank notes. As only a small fraction of the total note issue is likely to be presented for encashment in terms of legal tender (generally metallic) money, the maintenance of a correspondingly small reserve of legal tender (generally metallic) money by the issuing bank suffices to ensure the convertibility of its note issue. The remaining portion of the note issue, that is not covered by a legal tender (generally metallic) reserve, is protected by eligible securities which constitute the invested portion of the reserve. As long as the credit of the issuing bank is good, its notes circulate as money and serve as purchasing power in the hands of the public. This is the first way in which banks create credit money.

There is also a second way in which banks create credit money. When a bank accepts a deposit from a customer it has to pay interest to its depositor and incur some additional expenses on account—keeping etc. Hence it cannot afford to keep idly with it all the money that it receives on deposit. Its own and other banks' past experience has taught it that a legal tender reserve of, say, 20% of its deposit liability is quite sufficient to meet the demands of its depositors for with-

drawal of their deposits, and then the rest may be safely lent out. These sums lent out by the bank are again deposited (by persons to whom payments are made by borrowers) with this very bank or, may be, with other banks. 80% of these new deposits are again lent out. In this way, a certain volume of cash reserve with banks suffices against a deposit liability to the extent of, say, five times its own volume.

Again, when a bank is satisfied that a borrower is credit-worthy and is willing to offer collateral security acceptable to the bank, a loan is granted to him. The borrower, instead of taking out cash may find it more convenient to leave the amount on deposit with the bank and to draw cheques against this deposit to his credit, as, and when, need arises. Receivers of these cheques may transfer them to others or deposit them in their account at their banks, and draw cheques against these deposits. Since cheques serve as a means of payment, banks create credit in this way by granting loans, overdrafts and cash credits and by purchasing securities. These cheques swell the volume of the circulating medium and influence the price level in the same way as successive issues of currency.

An idea of the extent to which banks can create credit may be formed by taking an example. In Britain, the total deposits of the British banks, about the year 1940, were estimated at about £2400 millions, whereas the country's total stock of cash (i. e. other forms of money than bank deposits) could never have exceeded £ 600 millions, and the total cash holding of British banks could certainly be not more than £250 millions. It is, therefore, apparent that the British banks had, about the year 1940, created additional deposits to the extent of £2150 millions, otherwise from where could this amount have come into their possession?

Functions of a bank —A modern bank performs numerous functions and renders varied services to the community. It is by no means easy to catalogue, and consider, them all.

The primary function of a bank is to receive deposits from the public (at certain rates of interest) and thereby to mobilise the nation's savings to form a large stock of capital which, by being lent out to trade and industry (at higher rates

of interest), stimulates production and makes it possible to raise the standard of living in the country. These deposits may be made either in a current account or in a fixed deposit account or in a savings bank account. A deposit in the current account may be withdrawn on demand (i. e., at any time) by drawing cheques against it. A bank does not usually allow any interest on such a deposit. Some banks allow it when for a certain length of time the deposit exceeds a certain minimum sum fixed by the bank. A deposit in the fixed deposit account, on the other hand, is not withdrawable on demand and before the expiry of the period for which it was made. A bank receives it subject to a timely previous notice of withdrawal mutually agreed upon between the depositor and the bank. Rates of interest allowed on these deposits vary with the length of the period for which money has been left on deposit with the bank. Deposits in the savings bank account carry interest but can be withdrawn only after satisfying certain conditions. For example, some banks allow such deposits to be withdrawn only once a week, and require personal attendance of the depositor, or his agent, along with the pass-book at the time of withdrawal, or in case a large sum is sought to be withdrawn, a previous timely notice is insisted upon. These deposits are less liquid than deposits in the current account. Banks allow only a moderate rate of interest on deposits in the savings bank account.

An efficient discharge of this function by banks encourages people to save and place their savings on deposit with banks. In the absence of banks, people would have either spent away their entire incomes or hoarded their savings inside their homes. They could not have enjoyed the pleasure of seeing their bank balances swelling with every successive deposit and with the addition of interest to their accounts.

Deposits may, again, be divided into (a) cash deposits (i.e. exchange of a right to draw cheques against customer's money deposit), and (b) credit deposits (or exchange of a right to draw cheques by the customer against a right to receive money by the bank). When a customer deposits coins, cheques or drafts with a bank, a cash deposit is created, and for meeting its liability thus created by the customer, the bank has to maintain an adequate reserve to meet the demands for withdrawals.

Credit deposits, on the other hand, are created by banks in favour of their customers by granting them loans, overdrafts and cash credits or by discounting their bills and promissory notes. Against these deposits customers draw cheques to pay off their other creditors.

The second function of a bank is to lend money. Dribbles of spare cash collected from a large number of persons form ultimately a respectable volume of capital. Individual deposits may be withdrawn at any moment but deposits as a whole stay with the banker, suffering only slight variations from one date to another. The banker knows from his past experience what proportions of his deposits he can prudently lend with safety for varying periods of time. Comparatively speaking, although banks borrow in small amounts, yet they lend in large amounts, although they borrow for short periods, yet they lend for long periods; although they take immobile wealth from their debtors as assets, yet they lend their *IOU's* which are perfectly mobile and liquid, and serve as money. By each one of these transformations the banker has increased the productivity of capital.

Banks' loans and advances take two principal forms. The first form is that of loan of a certain amount for a certain period of time, or of an overdraft to a depositor in the current account up to a certain limit. Secondly, they may take the shape of discounts. When a banker discounts a bill or a promissory note, what he does is to purchase the holder's right to receive payment in respect of that instrument on the date of its maturity. The banker pays the holder of the instrument its present worth (i. e. the face value minus the interest for the period that the instrument has still to run), and gets back his money on the date of maturity.

Loans belong to two broad classes of secured and unsecured loans. Secured loans are those that are covered by a deposit or pledge of marketable stock exchange securities, bullion, goods, bills of lading, warehouse receipts, land and buildings and documents of title thereto, and life insurance policies. On such loans bankers charge a lower rate than what they charge on loans against personal security alone, because if the borrower defaults or becomes bankrupt the loan can be realised from the

sale proceeds of these collateral securities or, if the banker needs money before the date of maturity, he can repledge them with another bank and obtain a loan against them. Unsecured loans or clean advances may be made against the promissory note of the borrower (in which case it is known as a one-name paper), or against the joint promissory note of the borrower and his guarantor or surety (in which case it is known as a two-name paper).

Indian banks are extremely cautious in making unsecured advances but cash credits enjoy great popularity with them as well as with the borrowing Indian businessmen. These cash credits are loans against borrower's promissory notes, guaranteed by two sureties at least and often secured by a pledge of securities, goods etc. The lender can withdraw or reduce the accommodation whenever he likes, and the borrower has to pay interest only on the amount for which the cash credit has been utilised.

Loans may again be divided into (a) time loans which are repayable generally after a period of a month or more, and (b) demand loans including call loans. In the case of one type of demand loans, it is understood that the bank will allow the loan to run indefinitely unless the bank's deteriorating financial position necessitates its recall. These loans are, in actual practice, terminated only at the option of the borrower and carry usually a low rate of interest. Call loans or stock market loans are advanced generally to bill brokers and dealers on stock exchanges and are terminable theoretically at a moment's notice from either the bank or the borrower, but, in actual practice, on giving at least one day's prior notice.

Overdrafts are granted by the banks to their approved depositors in the current account. In case of overdrafts too some banks demand a collateral security, especially if the amount of the overdrafts is a substantial one. According to the differences in the credit position of various customers, amounts and periods of overdraft allowed to them by a bank also vary.

In discounting a bill, a bank, in reality, gives to the holder of the bill a loan in the shape of the present worth of

the bill, which he realises from the drawee on the date of its maturity along with the interest on this loan for the period that the bill had to run during its ownership by the bank. But banks prefer discounts to loans for several reasons. In the first place bills have a fixed date of maturity on which they have to be either paid or dishonoured, whereas loans seek frequent renewals. Secondly, as the date of maturity of bills is fixed and can neither be hastened nor postponed, the discounting bank can know the condition of its assets correctly on any date that it chooses. In case of loans this facility does not exist for the lending bank. Thirdly, in case of discounting bills, banks enjoy the facility of readily re-discounting them and converting them into cash, whereas in case of loans, it is not equally easy to transfer them to another bank and receive payment in respect of them. Lastly, the discounting of bills is considered to be safer than the granting of loans because in case of bills, not only the drawee but also the drawer and all subsequent holders thereof are legally responsible for payment, whereas in case of a loan only the debtor and the guarantor or the surety can be proceeded against for its realisation.

Formerly, the issue of notes was considered another main function of banks, but, at present it is only the central bank of a country that is generally authorised to issue notes. As long as commercial banks enjoyed the privilege of note-issue, they had a very profitable business. They retained with them, for purposes of their business, the money deposited by their customers and paid off their creditors in terms of notes issued by them. In issuing notes a bank is, in reality, lending its credit and has to maintain a reserve varying in inverse proportion to its strength. The profit of the issuing bank equals the amount of interest on the difference between the values of its notes in circulation and the reserve maintained for the redemption of these notes. Of course, some banks abused this right and failed ultimately, but notes issued by sound banks enjoying public confidence were willingly accepted by people for settling their mutual indebtednesses. This state of affairs continued in England till the year 1844 when the British Parliament had to pass the Bank Charter Act under which the right of other banks to issue notes was restricted and a provision was made for its gradual extinction. In India, only the Reserve Bank of India, which is the central bank of this country, enjoys the

right of note-issue since 1934. Between 1862 and 1934 the Government of India retained, in its own hands, the monopoly of note-issue in the country. For many years prior to 1862, the three Presidency Banks of Calcutta, Bombay and Madras enjoyed this right, but the notes issued by them enjoyed, at best, only a limited circulation which was confined mainly to these Presidency towns and among business magnates residing therein.

In addition to the performance of the important function of connecting the users and savers of liquid capital, a bank also renders general utility services such as : (a) The issue of letters of credit, travellers' cheques, circular notes and bank drafts which enable the customer to utilise the superior credit of the bank and to transmit funds economically over long distances.

(b) Acceptance of bills of exchange on behalf of customers, whereby the bank facilitates the extension of credit to its customer by a third party and makes the bills readily discountable.

(c) Acting as bailies, undertaking the safe custody of customers' valuables and securities, and thereby lifting a heavy burden off the shoulders of their rich customers.

(d) Supply of confidential information about the respectability, credit, worthiness, and sound financial position of their customers who are thereby enabled to satisfy distant firms and businessmen and establish trade relations with them.

(e) Banks exert a wholesome influence on business morals and foster the spread of commercial virtues in the community. In the words of Gilbart, "they encourage the industrious, the prudent, the punctual and the honest, while they discountenance the spendthrift and the gambler, the liar and the knave. They hold out inducements to uprightness, which are not disregarded by even the most abandoned. There is many a man who would be deterred from dishonesty by the frown of a banker though he might care but little for the admonition of

a bishop". They encourage economy, thrift, saving and investment and thereby attract prosperity to a country.

(f) Supply of trade information about business conditions at home and abroad to its customers.

(g) Supply of suitable denominations and forms of currency to businessmen in different trade centres. For example, if businessmen in the interior parts of the country prefer to transact business in terms of coins and are disinclined to receive notes, banks working in those parts will try to supply specie in exchange for notes and thus facilitate trade.

(h) Transfer of superfluous funds from a place where they cannot be very usefully employed to another place where they are urgently needed and most welcome.

(i) Transaction of foreign exchange business including (i) the supply of foreign exchange to importers to enable them to supply foreign goods for home consumption and (ii) the discounting of bills drawn by exporters on foreign centres whereby exports of home products to foreign countries are facilitated. In this way, banks help not only the internal trade but also the foreign trade of a country. In India, specialised institutions known as Exchange banks handle the work of financing the foreign trade of the country.

Apart from these services, banks also act as agents for their customers on whose behalf they perform such services as :

(a) The collection and payment of cheques, bills and promissory notes.

(b) The making of regular periodical payments to the income tax department, insurance companies, clubs and societies according to the standing instructions of customers.

(c) The collection of dividends on stocks and shares, and of interest on bonds and debentures held by their customers.

(d) Purchase and sale of stock exchange securities.

(e) Serving as correspondents, agents or representatives of their customers and of other banks and financial agencies at home and abroad.

(f) Acting as a trustee, attorney or executor for their customers.

(g) Receiving of rents, pensions, income tax and insurance premia on behalf of their customers.

Classification of banks—The financial needs of the modern industrial society are so varied that a country requires many types of banks, each of which is supposed to specialise in, and discharge, a particular kind of financial business. As economic conditions and financial requirements differ from one country to another, and as banking is a dynamic process, it is difficult to classify banks in a way that may at once satisfy scientific accuracy and accord to realities. Even a simple classification which is based on functional differences and wholly ignores structural variations may not altogether conform to realities, because the same bank may, in actual practice, be found engaged in many types of banking business.

According to their functions, banks may be placed in various categories such as commercial banks, industrial banks, agricultural banks, mortgage banks, cooperative banks, savings banks, central banks, exchange banks and international banks.

Corresponding to the two main types of credit—commercial credit and industrial credit—there are two principal types of banks as well. They are called commercial banks and industrial banks. Every industry needs two kinds of capital, viz., working capital and fixed capital. Commercial banks borrow for short periods and are therefore very well fitted for lending too for short periods only, i.e. for supplying to a pro-

ducer or wholesaler or retailer or commission agent the working capital which is needed for the production, movement or stocking of goods, and which can be recovered within a short period from the sale proceeds of the commodity produced or stocked by the manufacturer or the businessman.

Commercial banks, as a rule, have a small capital, relatively to their deposits. Working on so slender a foundation of their own funds and having always to reckon with the possibility of a run on them, these banks prudently keep their assets as liquid as possible and avoid locking up their funds in supplying the fixed capital requirements of industry. Hence they do not generally engage themselves in the promotion of new companies nor do they take that direct interest in a new venture (of which they may have even underwritten issues) as is necessary to ensure their success. In short, their main concern is to maintain under all circumstances the liquidity of the major portion of their assets and they cannot afford to allow the lure of even higher profits to sacrifice the liquidity of their assets.

Ordinary commercial banking business largely consists in the purchase of personal credit of businessmen and sale of banking credit to them by discounting their notes or creating in their favour deposits against which they may draw cheques.

Investment or industrial banking, on the other hand, concerns itself mainly with the supply of the fixed capital requirements of industry for equipping them with durable forms of capital like machinery, premises, fittings and furniture. As most of the funds at the disposal of commercial banks are furnished by short term deposits, they cannot afford to lock up their money in granting long term loans to industry. As industrial banks determine the channels into which available supplies of capital are to flow, every country realises the important part they play in the industrial life of the community. Still, till recent years, even a country like Great Britain has had no industrial bank worth the name. No doubt, British commercial banks advanced a limited amount of loans for providing farmers, householders and industrialists with such illiquid assets as farms, houses and extensions to the industrial plant. But the amount of help received from commercial banks was

necessarily limited. Hence, in November 1919, the Bank of England had to start the Securities Management Trust Ltd. to take off its shoulders the duty of assisting basic industries like steel and cotton industries and the industrial reorganisation of the country. The directors of this subsidiary company were chosen from amongst well-known experts fully equipped with the requisite technical knowledge so that they could assist any industry which wanted to rationalise itself. Again, on April 15, 1930, the Bank of England with the help of other principal banks floated the Bankers' Industrial Development Company Ltd. to deal with an industry as a whole or a regional section thereof, not with individual companies. This company, probably in deference to the criticism of the Macmillan Committee, had later on to reduce itself to skeleton by reducing its capital from £ 6 millions to £ 6000. During the last war, Defence Regulations and Capital Issues Advisory Committee enabled the State to canalise national savings into war, industries and government loans. In post-war years the national demand for an organised agency for industrial finance resulted in the starting of the Finance Corporation for Industry in January 1915, with an authorised capital of £ 25 millions. It has rendered substantial help to British industries by advancing loans and subscribing to their capital issues.

To help the financing of industrial reconstruction, the British Government had to start, at the end of the last war, another specialised institution, viz., the Industrial and Commercial Finance Corporation. This institution fills the considerable "credit gap" which cannot be filled by other banks and financial agencies in the country.

Following the example of Britain, India too had, for a long time, no industrial bank worth the name. Still the long-term financial needs of industries were met, though inadequately, by certain agencies. In the wake of the Swadeshi Movement of 1905, a number of banks cropped up, specially in the Punjab, to supply long-term loans to industries, but they could not survive the banking crisis of 1913-16. After the first world war, a number of industrial banks again came into existence, but very soon they either disappeared or changed their business. It is only recently that an Industrial Finance Corporation has been established in India. It is

hoped that the assistance and advice of this Corporation will facilitate industrial expansion in this country on a large scale within a short time.

In Japan, however, as early as 1902, the Industrial Bank of Japan came into existence to finance the Japanese industries. Its success can, no doubt, be called creditable.

Industrial banks, as a rule, start with a large share capital and may further be empowered to raise additional funds to a certain extent by issuing long-term bonds and accepting long-term deposits. They hardly receive any short-term deposits, hence they can afford to lend freely to industries for long periods. Being share-holders' banks, they try to invest their money where they expect to earn highest profits consistent with the assumption of the least amount of risk. They do not care so much for the liquidity of their investments. With stock exchanges functioning in important cities, at present the danger of their investments remaining altogether illiquid largely disappears. Hence, their distinctive guiding principles in the matter of investment differentiate them from other banks. Commercial banks always look to the liquidity of their assets, whereas industrial banks have their eyes mainly on the profitability of their investments.

Some countries have evolved another system, popularly known as 'mixed banking'. For example, German banks, having a large share capital and existing mainly for financing the fixed capital requirements of industries, have, by accepting deposits from the public embarked upon commercial banking as a sideline and not as their principal business. Similarly, in the U. S. A., commercial banks also undertake investment banking although the Banking Act of 1935 has done much to limit this admixture in their functions.

Like manufacturing industries agriculture too needs working capital and fixed capital. Just as industrialists have commercial banks to provide them with short-term loans, similarly agriculturists have their cooperative banks to supply their needs for short-term loans in many countries. No doubt, in some countries like the U. S. A. and Canada, commercial banks supply short-term loans to farmers as well. Long-

term financial needs of agriculturists for buying farms, cattle and machinery and for sinking wells are supplied by the land mortgage banks or farm mortgage banks. In India the indigenous bankers still play a prominent part in supplying the credit needs of agriculturists all over the country, although their methods of business are not altogether straight.

Another type of banks, commonly known as savings banks, stand midway between commercial banks and industrial banks. Like commercial banks they too attract deposits from the poorer sections of the population but impose certain restrictions on withdrawals by depositors. Some of these banks permit withdrawal by means of cheques too. Like investment banks, they do not lend directly to individuals but buy investments.

A special type of commercial banks, that have specialised in foreign exchange business in order to finance the foreign trade of India and have their head offices in foreign countries, is popularly known as exchange banks. Like other Indian joint-stock banks, they receive current, fixed and savings bank deposits and finance inland trade specially in goods that are in transit before leaving the country or immediately after entering Indian borders. But, unlike other Indian commercial banks, they deal in foreign bills, grant loans against bills of lading etc., and finance imports of bullion into India.

CENTRAL BANKS

Practically every country today possesses a central bank "which constitutes the apex of the monetary and banking structure of its country," and which is run not for earning the maximum profit for itself but for maintaining the general economic stability of the country and for carrying out the broad monetary policy of the state. Although its organisation may resemble that of a joint stock bank, yet its purpose is altogether different from that of other banks. It is held responsible for regulating and controlling the currency and credit in its country so as to maintain the stability of the internal as well as the external value of the home currency. It has also to serve as the Bankers' Bank and State Banker, and to provide clearing house facilities in the country. Its duties, therefore, include (a) the mo-

bilisation of the banking reserves of the country and their utilisation in warding off runs on member banks and coming to the rescue of the money market in times of a crisis, (b) safe custody of the government's cash balances, (c) maintenance of an adequate note-issue in the country, (d) provision of additional currency in times of emergency, and (e) the provision and conservation of foreign exchange.

State and the central banks. The capital of these banks (which is not very large in any case), except that of the State Bank of U. S. S. R., was contributed by private shareholders (at present a movement for the nationalisation of these banks has set in and the Central Banks of England, India and some other countries have already been nationalised). Still, in the interests of the safety of government's cash balances and to ensure a due discharge of the onerous duties which are assigned to the country's central bank, the government, even if it does not own the bank, uses its authority (1) to control the management of the central bank by harnessing custom and legislation into its service for this purpose and (2) to take a substantial sum, either out of the profits of the bank or as a franchise tax.

A central bank has also to undertake agency business for the state. It has to be always ready (1) to lend as much to the government as is consistent with a sound banking practice and (2) to distribute government loans among other banks and individuals. As the financial transactions of a modern government mount up to colossal heights, a central bank has necessarily to see that they are permitted to create the least disturbance in the money market. Traditions too impel a central bank to act as state bankers. Starting on this path by accommodating the state for short periods, central banks ultimately found these loans developed into long term, and even permanent loans, which had to be granted as the price of the charter and monopoly right of note-issue. From the XIXth century central banks began to be called upon to issue government loans, although they took care to pass them on to investors without subscribing to them or lending against their security to any appreciable extent. Thus emerged their designation of the custodian of government's cash balances, and they developed their practice of receiving and disbursing on behalf of the government. Circumstances forced even those

governments, that had, at first, persistently refused to enter into such a relationship with any bank, and had therefore maintained separate treasuries and sub-treasuries for this purpose, to abolish them ultimately and utilise the services of their central banks as their financial agents. At present, central banks (1) issue and repay their governments' short-term and long-term loans, (2) hold and disburse state funds, (3) undertake the safe custody of their governments' cash balances and (4) manage the public debt. During the world war, rather than wait for the successful floatation of a loan in the market, the state would obtain the necessary funds directly from the central bank. Even after the floatation of a huge loan, the central bank had to support the market by lending extensively. In both cases the central bank had to carry a huge portfolio of resulting obligations. Even the recommendations of the Cunliffe Committee could not materially relieve the Bank of England of this obligation. Other countries too have ordained their central banks to support the money market and the state, and to finance the governmental short term loans which, by seeking constant renewal, have, in reality, become long term loans to the government. The Bank of France has been made legally and openly to grant huge 'permanent interest-free loans' to the French government. Dealings in government loans are now considered suitable for effecting necessary expansion and contraction of currency in the interest of price stabilisation. Further, a central bank is also considered to be capable of influencing the money market in such a way as to enable the state to raise its loans at a lower rate of interest and thus save the tax-payer from the burden of heavier taxation.

Unfortunate experiences of several central banks about the financing of the state during the first world war were responsible for imposing severe restrictions on their powers of making advances to the state or buying government securities in the post-war period.

Central banks' relations with the state during the last hundred years reveal an alternating loose control and tight grip of the state over the central bank. Till the seventies of the last century various governments pressed their central banks for increasing accommodation, but, with the wide-spread

adoption of the gold standard, central banks were allowed to enjoy a freer atmosphere till the outbreak of the first world war. From 1914 onwards central banks were again yoked in the service of the state for bringing the war to a successful termination. The seven years preceding the onset of the great depression were again marked by the comparative freedom of central banks from state domination. Suspension of the gold standard in 1931 and outbreak of the second world war in 1939 reversed the process and increased the control of the state over central banks. The restoration of the gold standard in a modified form by the establishment of the International Monetary Fund raised again the hope that the state would loosen the nose-string of central banks but the recent nationalisation of the central banks of Britain, India and other countries serves as a pointer to the counter direction.

It will be thus seen that the period preceding the end of the first world war stressed state control but the post-war years were marked by a strong feeling against state interference and by the adoption of such measures as could effectively limit the opportunities for state intervention. On the other hand, the post-depression period has seen a further tightening of the grip of the state over its central bank in many countries and the complete nationalisation of the central bank in a few countries. The earlier idea of making a central bank independent of state control has yielded place to the recent realisation that, in these days of planned economy, the state must have control over, and direction of, the entire economy and specially over the central bank which is the heart of the economic system of a country. Further, it is now being increasingly realised that perfect collaboration and complete co-operation between the state and the central bank are essential for the economic regeneration of a country in the war ravaged world of today.

Note-issue.—An important function of a central bank is to enable other banks to convert their assets into cash in periods of stress. At such times a central bank has to lend freely to other banks its notes which are substitutes for coined money for internal use. Because of their ability to obtain sufficiently large amounts of cash from their central bank, member banks are able to ward off even a severe run on them, and are thus

saved from resorting to a general contraction of loans which may plunge the business community in serious financial difficulties.

Note-issue, according to Vera Smith, is the chief function of a central bank, which derives its other functions and characteristics from this very source. As excessive note-issues promote an over-extension of credit, an abnormal rise in the price-level, an adverse balance of trade, an exportation of gold and ultimately an acute financial crisis, their control becomes a fundamental problem which confronts every central bank. At the same time the note-issue of a country should also be capable of meeting the legitimate currency requirements of the country's trade and industry at all times. The note-issue should, therefore, be elastic also. Hence various methods have been evolved for regulating the volume of note-issue in a country.

The first system of note-issue adopted in 1844 by England and later on by several other countries is known as the partial fiduciary issue method. Under this system, the Bank of England was authorised to issue notes up to a fixed amount against government securities kept by it in the reserve, but all notes issued above this amount had to be fully covered by gold. In September 1939, this system was discarded and now the note-issue of the Bank of England is directly covered mostly by government securities and only a small amount (about £ 1,500,000) of gold and silver coins is in the reserve. (At present all the gold and foreign exchange reserves of Great Britain are concentrated in the Exchange Equalisation Account).

The second method of a fixed maximum issue (which may be raised from time to time) without any gold cover being prescribed by law has been followed by England since 1939 and by Japan since 1941. France too followed it between 1870 and 1928. At times this system was found to be rigid and inelastic, and at times it led to inflation.

The third method limits the note-issue to the value of eligible government bonds held in the reserve and the paid-up capital of the issuing bank. For some time this method was followed by the Colony of the Cape of Good Hope in

South Africa where the note-issue was limited to the paid-up capital and reserve of the issuing bank and had to be fully covered by government securities. This system suffers from inelasticity.

The fourth method is known as the proportional reserve system under which the issuing bank is required to maintain a metallic and foreign exchange reserve of at least 25 to 40 per cent of its note-issue and the remaining portion has to be covered by certain specified assets. This method has been widely adopted, with slight variations, by Germany, U. S. A., India and other countries. This system possesses elasticity.

The fifth method used in the Union of South Africa since 1930 prescribes a gold reserve to cover at least a minimum percentage of the note-issue, but makes the notes a first charge on all the assets of the issuing bank which is, thus, allowed greater freedom in the selection of its assets which may be used as a cover for that portion of the note-issue which is not covered by gold. This system combines maximum elasticity with adequate safety for the country's note-issue.

Formerly, reserve requirements could be temporarily suspended on payment of a graduated tax to the state in several countries. Recently circumstances have forced several countries to suspend indefinitely, or to abolish altogether, the reserve requirements against note-issue which has become infinitely elastic.

Credit control—In order to maintain the stability of the price level a central bank has to exercise 'credit control' too. A central bank can regulate the amount of credit available to other banks by changing its discount rate or by 'rationing' its credit to various classes of customers. Because of possessing the power to weaken or strengthen the cash position of other banks, a central bank can generally enforce a policy of credit expansion or contraction in the country. If the manipulation of the discount rate fails to achieve its end, 'open-market' operations are undertaken to compel other banks to cooperate with the central bank in the carrying out of its policy of credit expansion or contraction.

Rationing of credit—As an instrument of credit control, rationing of credit was employed by the Bank of England towards the end of the eighteenth century by fixing the amount up to which it would discount bills of any one customer on any day and by shortening the currency of bills eligible for rediscount. After the first world war, rationing in one form or another was again employed by central banks of Europe. Authoritarian states employ it as a logical concomitant of their plans. Absence of a developed money market in the country and the rigidity of its economic structure forced the Bank of Mexico to limit the amount of credit that might be granted to any particular customer. The same end may be attained by limiting the types of paper eligible for rediscount at the central bank.

The discount rate—The official discount rate, i.e., the discount rate of the central bank of a country (popularly known as Bank rate), is the rate charged by the central bank in respect of first class bills of a given maximum currency. In other words, it is the minimum rate at which the central bank will be prepared to rediscount bills bearing at least two good names, one of which should be that of a member bank or a reputable local acceptor, whereas in cases of other bills the rate would vary according to their quality and currency.

The discount rate has been employed by central banks as their principal instrument of credit control. A central bank is charged with the responsibility of meeting all reasonable demands of its customers for accommodation of which they are assured by the preparedness of the central bank to rediscount their bills apparently without limit. But, as the central bank has to conserve the supply of credit and protect its gold reserves from suffering a dangerous depletion, it has sometimes to raise its discount rate so that the demand for accommodation may remain confined to those cases alone which are most urgent and necessary.

In a well-organised money market a close relationship between the bank rate and short-term money rates tends to be established, if the money market works on a narrow margin and depends upon the central bank for ultimate accommodation in times of need. This relationship is strengthened by traditions,

conventions and acceptance of the leadership of the central bank. In times of heavy seasonal demand or increased business activity the money market has to approach the central bank for rediscounts and for obtaining its supplies of loanable funds. When a bank obtains its supplies of funds from the central bank at the Bank rate, it cannot afford to charge its customers any rate lower than the Bank rate. In this way the market rate of discount is forced up to the level of the Bank rate which becomes effective in curtailing credit. Ordinarily, the central bank is able to contract credit by raising its discount rate, but, at times when the money market has sufficient funds and consequently no need to seek accommodation from the central bank, it has to resort to open market operations in order to deplete the market of its funds and 'to force' it into borrowing from the central bank which, then, charges its official discount rate and makes it effective.

If at any time, the central bank desires credit-expansion, it lowers its discount rate and expects the money market to follow its lead and lower the market rate of discount too. If the central bank is not obeyed by the money market, it announces its willingness to have direct dealings with (by discounting bills directly for) the general market. In competition with the central bank the money market has ultimately to lower the market rate of discount and allow credit expansion.

In short, the rediscount rate is the principal instrument by which the central bank encourages or discourages rediscounting with it by member banks. By raising its rediscount rate, the central bank makes borrowing by its member banks more expensive, and thus restrains them from expanding credit. By lowering its rediscount rate the central bank makes borrowing by member banks cheaper, and thus encourages banks to extend credit. The extent to which a central bank can make its discount rate 'effective' depends on certain conditions. If, for example, the price-level is rapidly rising, the raising of the discount rate may prove ineffectual to a great extent, as central banks of Europe found it to be after the first world war. If other banks possess greater resources than the central bank, they combine to neutralise greatly the efforts of the central bank to restrict credit in the market.

Open market operations—If member banks possess sufficient funds of their own, the central bank's discount rate may prove powerless to restrict credit and raise money rates generally. For the purpose of controlling the money market a central bank is, therefore, provided with another powerful weapon known as 'open market operations'.

Meaning of open market operations—Open market operations mean the central bank's purchase or sale of any kind of eligible assets (such as stock exchange securities, bankers' acceptances or foreign exchange) for the purpose of controlling credit in the country.

If the raising of the discount rate in order to restrict credit proves insufficient to raise the money rates in the market, the central bank begins to sell securities or bills in the market and thereby draw money into its coffers till the cash position of member banks is so much weakened that they have to seek accommodation from the central bank. The central bank then charges its official rate of discount which thus becomes effective.

Similarly, in order to relieve a sudden stringency in the money market, a central bank may resort to direct dealings with the money market, when in competition with the central bank other banks will have to lower their own rates. Alternatively, it may start purchasing bills and securities till the cash holding of member banks is greatly inflated. As they cannot afford to keep idly with them large amounts of cash, they try to attract their borrowers by offering lower discount rates. In this way, the central bank's lowered Bank rate becomes effective. The same end of making the Bank rate effective is achieved by the central bank by the purchase or sale of

- (1) The short term loans of the government (or treasury bills),
- (2) long-term loans of the government,
- (3) foreign exchange,

- (4) stock exchange securities
- (5) banker's acceptances,
- (6) precious metals, and
- (7) by borrowing or repayment of loans in the market against the pledge of government securities.

Open market operations, in this way, increase or decrease the supplies of loanable funds in the market and thus force an expansion or contraction of credit in the country.

It will be thus seen that the credit policy of the central bank finds expression through its effect on the cash position and the lending capacity of member banks. Ordinarily, it is not necessary to use these powerful weapons in actual practice. The mere fact that the central bank is armed with them is sufficient to ensure the member banks' ready submission to the wishes of the central bank in this matter.

Scope of operations of central banks.—Should a central bank act as a relief institution only in an emergency or serve as a constant equilibrating factor in the money market?

Believers in the emergency relief theory hold that a central bank exists solely for meeting emergencies and that in a crisis alone it should come out "like a fire engine" to put out a financial conflagration. On the other hand, exponents of the banking point of view hold that a central bank should function continuously and regularly like any other bank (and unlike a relief institution) and that it should formulate suitable policies for every occasion and handle emergent situations as they arise. This divergence between the opinions of these two schools has also created a difference in the extent to which a central bank should have the right to embark upon open market operations. During discussions on the Federal Reserve Bill, American banks strongly opposed the grant of power to Federal Reserve Banks to operate in the open market, but during recent years both Europe and America have admitted that a continuous and liberal use of these operations is necessary for central banks. If member banks confined their credit extension

within proper limits, a central bank can have no legitimate occasion to interfere, but, as government transactions, international banking operations and speculative outbursts are constantly disturbing the market, the central bank has to remain practically all the time in the market as a constant factor.

EXCHANGE AND INTERNATIONAL BANKS

The business of mobilising and transferring funds, from a country where capital is cheap to another country where it is dear, is known as international banking. This transference of funds between two countries may also be necessitated by the need for the settlement of current international obligations. Again, the transference of funds may be for a short term, as in the case of acceptance credit, or it may be for a long term, consequent on a bond issue. Success in both fields depends on a bank's ability to establish respectable foreign connections.

European merchants of the 16th century, like the Fuggers of Augsburg, appear to have been the pioneers in international banking, having undertaken the financing of foreign trade as well as the granting of long-term loans specially to royal borrowers. The banking house of the Fuggers helped Charles I, King of Spain and Sovereign of America to become Emperor Charles V of Germany in 1519 and, in return, got the right to transact the entire banking business of his vast empire and the monopoly of coinage and of working a number of mines in Spain and America. Their fabulous wealth enabled them to become bishops, barons, dukes and even princes and to survive even to this day. Coming to the 18th century we find London banking houses undertaking international acceptance business, floatation of foreign government loans and sale of foreign industrial securities. The best known among them—Barings and Rothschilds—granted extensive short-term credits to foreigners and also raised long-term loans for them. After 1914 New York captured the field of international banking, and floated successfully many loans for the Allied Powers. After 1918 large credits were extended to Germany and Latin America too, but their numerous defaults ultimately closed the doors of this market to defaulted foreign borrowers. Soon after the first world war new American banking companies began receiving foreign deposits, issuing acceptances and financing foreign trade. Practically since the beginning of the present century a plentiful supply of loanable funds in the U.S.A influenced New York to undertake international banking. No

doubt, besides London and New York, some other centres like Paris and Amsterdam too took an appreciable part in international banking.

Recent political and economic factors have undoubtedly paralysed long term international credits and short term international trade finance, but international deposit banking specially in the U. S. A. has been recently greatly stimulated. Whereas formerly liquid funds would seek markets where interest rates were high, during the interval between the last two world wars their movement was influenced by speculative forecasts of probable changes in foreign exchange rates, and was responsible for introducing a good deal of uncertainty in this field. Hence after 1929 many countries had to establish exchange equalisation accounts for stabilising exchange rates.

Since 1925 economic and financial interdependence of various countries necessitated the maintenance of close co-operation between various central banks. During a modern war, credit control and inter-government collaboration are necessary and in peace time too, international rediscounting and transfers of gold have to be undertaken to prevent national or global crises. During the first world war such an international banking cooperation was attempted both by the Allied and Central Powers. In the post-war period too, the Brussels Conference of 1920, the Genoa Conference of 1922, the World Economic Conference of 1933, the Macmillan Committee and the Gold Delegation emphasised such a collaboration in the interests of the weakened central banks and for the prevention of the revival of the pre-war mad "scramble for gold". After 1924 leading central banks had to promise funds for safeguarding the normal functioning of the new currency standards adopted by various countries. The Federal Reserve Bank of New York promised to purchase British bills up to a certain amount at a fixed rate of discount, if need arose, to help the maintenance of a Gold Bullion Standard in Britain. The success of these experiments in the field of international financial collaboration paved the way for discussing the practicability of establishing a world bank to deal with the problems of international stability of prices and control of money markets and of German reparations (imposed by the Treaty of Versailles) and other connected issues.

The Young Plan of 1929 which superseded the Dawes Scheme of 1924 embodied the recommendations of the reparations experts and originated, mainly for the purpose of dealing with the problem of German reparations, the Bank for International Settlements which was founded in 1930 at Basle under a Swiss charter under the official sponsorship of the central banks of England, France, Germany, Belgium, Italy, and Japan and an American group of bankers with an authorised capital of five hundred millions Swiss gold francs. According to its statutes, it was intended (1) "to promote the cooperation of central banks, (2) to provide additional facilities for international financial operations; and (3) to act as trustee or agent in regard to international financial settlements entrusted to it." But with Germany's default in paying reparations after 1931 disappeared the main purpose for which it was created. Still its official status and potentialities as an international banking institution, rather than its intrinsic worth at the present time, are responsible for the attention that has to be bestowed on it. Although it was intended to become a central bank for other central banks, yet its relations with other leading central banks are reciprocal. Its incorporating act limits its general banking business to (1) the acceptance of deposits from, and acting as a discount agent for, other central banks, (2) dealing with other banks and individuals only with the express permission of the central bank of the country concerned, (3) the purchase and sale of gold and foreign exchange, (4) rediscounts for central banks, etc. It has no right of note-issue and has to maintain a gold or foreign exchange reserve of 40 per cent against its demand liabilities and of 25 per cent against its time liabilities. "In the past the Bank confined itself to receiving and administering deposits expressed in a weight of fine gold. At present the Bank has shortened the term of its investments and accumulated a substantial stock of gold for its own account, particularly in Switzerland and the United States." Assets like rediscountable bills and acceptances consisting of commercial bills, bankers' acceptances, and Treasury bills, sundry bills and investments and claims, and the Bank's funds in Germany reveal the Bank's main activities these days. Its liabilities include (1) deposits of central banks and other depositors, (2) international postal payments account and (3) German Government deposits, and throw light on the Bank's current activities.

It has also continued to discharge trustee and agency business.

The success of the Bank may be judged from the facts (1) that it could float in June 1930 the first German annuity loan of three hundred million dollars, and (2) that it was made trustee for a new Austrian loan of a hundred million dollars. Even though after 1931 Germany stopped paying reparations and practically every important country went off the gold standard, yet the Bank has survived the last global war and the recent appearance of most powerful institutions like the International Monetary Fund and the International Bank for Reconstruction and Development, in the field of international banking. (These two institutions are largely complementary in character of membership as only members of the Fund can become members of the Bank).

The International Monetary Fund and the International Bank for Reconstruction and Development.

The establishment of these two international financial institutions, viz, the International Monetary Fund and the International Bank for Reconstruction and Development was recommended by the United Nations Monetary and Financial Conference held at Bretton Woods in July 1945.

The former has been set up (1) to promote international monetary cooperation and to provide a machinery for consultation and collaboration on international monetary problems; (2) to promote exchange stability, to maintain orderly exchange arrangements among members and to avoid competitive exchange depreciation; (3) to establish short term equilibrium in the international balances of payments; (4) to promote balanced growth of international trade of member countries without unduly restricting their freedom to pursue their own domestic, social or political policies; (5) to assist (a) the establishment of a multilateral system of payments in respect of current transactions between members and (b) the elimination of foreign exchange restrictions which hamper the growth of world trade. Thus, the Fund has been designed primarily to meet the short term credit needs of member countries. The Bank, on the other hand, is intended mainly to

stimulate and, where necessary, to supplement the flow of international long-term capital for assisting the reconstruction and development of member countries with a view to attain long-term international equilibrium.

The relative shares of countries in the share capital, voting rights and management of the two institutions and the borrowing rights in the Fund (but not in the Bank) are regulated by the quotas of members, the six largest quota-holders being the U. S. A., the United Kingdom, the U. S. S. R., China, France and India.

The International Monetary Fund started functioning from March, 1947 and its first exchange transaction took place about the end of May, 1947, when the Fund granted stabilization credits to France and the Netherlands. By the end of May 1948 the Fund sold exchange against members' currencies for more than six hundred million dollars. Besides these sales against members' currencies, the Fund sold a small amount of U. S. dollars against gold. To meet the growing deficit in her balance of payments with the United States, India purchased from the Fund nearly 44 million U. S. dollars till the end of June 1948 by tendering the equivalent of this amount in rupees. In June 1947 the Fund warned member countries against external sales of gold at prices above monetary parity and urged them to eliminate such transactions. In December 1947 the Fund directed its members to obtain its previous sanction before subsidising gold production. In obedience to this direction from the Fund, Canada placed its proposed scheme (for subsidising gold production) which was examined and approved by the Fund. In April 1948, the Fund advised its members participating in the European Recovery Programme to apply for the purchase of U. S. dollars only in case of exceptional or unforeseen hardship so that the resources of the Fund may be maintained at a safely high level.

The International Bank for Reconstruction and Development became active from May 1947 when it granted its first loan of 250 million dollars to France. Later, the Bank granted loans amounting to 263 million dollars to the Netherlands, Denmark, Luxemburg, and Chile. These loans have been

granted in U. S. dollars, Belgian francs and Swiss francs for the purpose of financing imports of capital goods and equipment necessary for the reconstruction and rehabilitation of vital sections of war ravaged European industries, and for the development of agriculture and hydro-electric projects in Chile. The Bank is, at present, examining some other applications for loans from its members.

In July 1947 the Bank's first issue of bonds totalling 250 million dollars was heavily over-subscribed in the U. S. A. The Bank's other floatation of bonds in the Swiss market in May 1948 was entirely taken up for investment by the Bank for International Settlements. Such productive loans as these are raised in a market, or granted to a country out of its own paid-up capital and general reserves, only when the Bank is unable to promote foreign investment (on reasonable terms or in adequate amounts) by guaranteeing the whole or a part of the loans which may be made by private investors through the usual investment channels. Ordinarily, New York, London and other financial centres invest their surplus capital in certain classes of foreign loans and issues of securities at relatively low rates of interest, even without any guarantee from the Bank. The Bank's guarantee is needed only for such loans as are sound propositions but are still not being taken up by the market at all or can be floated only at high rates of interest. The Bank's guarantee is really an international guarantee which spreads the risks of foreign loans over debtor as well as creditor countries. As such, the practice is likely to prevent the disequilibrium between international saving and international investment and to give each country a larger stake in the world as a whole. This measure is also calculated to swell the stream of loanable capital and to make it available at relatively low rates of interest, say 4 to 4½ per cent per annum. In order to minimise the risks assumed by the Bank in guaranteeing or granting loans, the government or the central bank of the borrowing country has to guarantee fully the repayment of the loan and its attachment charges.

The Fund and Bank plans aim at securing a world economic cooperation of which central banking cooperation forms an important part. The Fund plan contains certain features of the gold standard such as (1) gold as the common measure

of values, (2) a fixed par value (in terms of gold) for the currency of every member country, (3) the confining of fluctuations in the exchange rates between currencies of member countries within a specified limit on either side of the par value for transactions in gold. It is a modified form of the gold standard because (1) its functioning does not entail the free convertibility of currencies into gold, (2) it limits its members to exercise the necessary exchange control over capital transfers, (3) it allows orderly changes in the par values of currencies in cases of fundamental disequilibrium and for uniform proportionate changes in the par value of currencies generally. The Fund plan, therefore, removes the rigidity of the gold standard and makes it suited to serve the needs of a world suffering from disequilibrium, maladjustment and disruption caused by the two great wars of this century, and possessing managed currencies which occasionally display competitive depreciation with its attendant evils. No doubt, the deteriorating world economic and political conditions these days make the prospects of the success of both the Fund and Bank plans rather dark. Moreover, the financial requirements of the present world appear to be much more than what the resources of the Fund and the Bank can safely supply. These twins promise to replace narrow nationalism by broad internationalism but much of their success depends on whether they can sail quite clear of the Scylla and Charybdis of racial discrimination and power politics which are threatening at present to found the ark of human civilisation.

PART IX
International Trade

THEORY OF INTERNATIONAL TRADE

International trade refers to the exchange of goods and services between one country or region and another. This is to be distinguished from internal or domestic trade which deals with trade within the geographical boundaries of a nation or region.

Why do people engage in trade? For the simple reason that such an exchange increases their satisfaction by enabling the participants to share the advantages of the division of labour. Man has numerous wants, but he seldom can produce all the things he needs. He, therefore, specializes in producing things for which he is best fitted and exchanges his surplus for the things produced by others. Such a process of exchange enriches both the parties.

On the same principle, each nation tends to concentrate on the production of things for which it is most suited. Just as specialization benefits the individual, so also it benefits regions and countries. Nations differ in their natural resources, the skill and capacity of their workers, their geographical position and the like. Accordingly, each nation is better equipped for taking to some special branch of production than every other. It is to the advantage of all to specialize in their respective spheres and exchange their output. In the words of Marshall, "If goods, which can be produced at home, are yet imported freely from abroad, that shows that they can be got generally at less cost by making other things with which to buy them from abroad than by the direct method of making them at home."

If the justification for all trade, be it internal or international, lies in the advantages of division of labour, why should there be a separate theory for international trade? The answer is, that in spite of similarities, there are certain basic differences between the two which necessitate a separate treatment of the theory of international trade. It must, however, be made quite clear at the very outset that the theory of international

trade is but a special case within the General theory of Value. The undermentioned distinctions only limelight the peculiarities inherent in international trade which entitle it to a special treatment.

Distinction between foreign trade and home trade. First, labour and capital are more mobile between different parts of the same nation than between different nations. The cause of this immobility is prejudice, differences in language and customs, natural inertia, restrictions placed by nations and so on. Generally speaking, the degree of immobility is greater for labour, since it relates to the human factor. But even though capital is comparatively more mobile, it tends to congregate generally within national boundaries chiefly due to the greater risk and uncertainty of foreign investment. Thus, 'production in different countries is carried on in more or less closed or noncompeting compartments while production in any one country is accompanied by a direct competition for the several agents of production'.

Secondly, all trade is carried on in terms of money. But while in internal trade the same monetary unit is used, in international trade two or more different units are used in one transaction. The fact that 'trade between nations involves not only an exchange of goods but also an exchange of their moneys', raises problems of foreign payments, rates of exchange, relative values of the monetary unit, etc., which in practice exercise a great influence upon the direction and volume of trade.

Lastly, each country conducts its production under different conditions, regulations and systems. There are differences in the systems of taxation, of labour legislation, of social insurance, of transport and public utility services, of commercial and fiscal policy and of industrial organization. A nation's economy is shaped by these factors, and consequently such differences have a marked bearing upon the course of international trade.

Conditions leading to international trade. On the basis of international division of labour, it can safely be said that commodities tend to be produced in those countries where their

cost of production is the lowest. This explains why India produces jute, oil seeds, tea and similar goods which occupy a prominent place in its export trade. Similarly, Japan produces and exports textiles and toys, Great Britain manufactures and sends out woollen goods and tools, U. S. A. engages in the production of machines, car and numerous other manufactured products, and has a foreign market for such wares.

These, then are the important distinguishing features which necessitate a separate elaboration of the theory of international trade, as a special case of the General Theory of Equilibrium.*

Absolute differences in cost. In some of these cases the producing country has a definite superiority in what it produces and exports, (coffee in Brazil, spices in the tropics, jute in India, steel in the U.S.A., etc.) and an equally definite inferiority in what it imports. The condition which leads to trade along these lines is known as a condition of absolute differences in costs. Let us illustrate such a case by taking two countries and two commodities, and representing the costs in terms of labour (as the Classical economists did).

| | Jute | Woollens | |
|---------|---------|----------|--------------------------------|
| England | 1 unit | 2 units | } Product of one day's labour. |
| India | 2 units | 1 unit | |

Clearly, England enjoys superiority (absolute advantage) in producing woollens and India in producing jute. Each nation will, therefore, specialize in the field where it reigns

*Note:— The following is the 'Modern Classical' version of the theory of international trade. It draws largely on Prof Taussig's analysis. It will be noted that this approach has for its foundation the obviously unrealistic assumption of the 'Labour-cost principle'. More recent treatment of the subject, such as that of Ohlin, Haberler, Williams, Viner and some others is critical (in different degrees, of course) of the classical analysis, and presents a more scientific, realistic and acceptable dissertation, incorporating the theory of international trade within the boundaries of the General Equilibrium theory. Readers interested in a more advanced study would be well advised to follow up the explanation presented in this Chapter, with studies from the writers mentioned above.

supreme, and engage in trade with the others. The advantage they gain thereby can be expressed in term of the increase of total produce. For if each nation meets its own requirements of both jute and woollens, the total product of 4 days' labour is 3 units of jute+3 units of woollens.

But if there is specialization and trade, the total output for the same effort is 4 units of jute+4 units of woollens.

Moreover, on the basis of labour-costs, the ratio of exchange between jute and woollens is as follows :—

England 1 unit of jute for 2 units of woollens

India 1 unit of jute for $\frac{1}{2}$ unit of woollens.

England gains by exporting woollens and getting anything more than 1 unit of jute for 2 units of woollens. Similarly India gains if she gets anything more than $\frac{1}{2}$ unit of woollens for 1 unit of jute. If we neglect transport costs and other complicating factors, and assume that the intensity of demand for these goods is such as to enable the countries to share the increase in production equally, the ratio of exchange at which trade is carried on will be :—

1 unit of jute for $1\frac{1}{2}$ units of woollens;
a transaction advantageous to both.

Equal differences in costs. Let us take another example, on the same lines as before :—

| | Textiles | Woollens | |
|---------|----------|----------|--------------------------------|
| England | 2 units | 2 units | } Product of one day's labour. |
| India | 1 unit | 1 unit | |

In this example, England has an absolute advantage over India in the production of both textiles and woollens i.e. labour is more efficient in both the industries in England. But the degree of superiority is the same in both cases. The ratio of exchange is as follows :—

England 1 unit of Textile for 1 unit of Cloth.

India 1 unit of Textile for 1 unit of Cloth.

Thus even with absolute superiority in both the fields of production, England does not gain anything by trading with India. And, in spite of its inferiority in both, India does not lose by not trading with England. This situation arises because the ratio of exchange is the same in both the countries. In other words, there is equal difference in costs. As is obvious, no trade will ensue under these conditions.

Comparative differences in costs. The type of cheapness as represented under absolute advantage, does not fully explain the movements of goods between nations. There are occasions (and the majority of foreign trade transactions come under this head) when a country is superior to another in the production of both commodities and yet it imports one of these. A manufacturing country like U. S. A., imports tools and machinery of a certain category from Britain, even though it may be superior in the production of that. A country like England, though better suited to the production of dairy products than Denmark, yet imports such goods from that country. What is the reason for such seemingly strange transactions? Undoubtedly, that such a flow of goods brings some gain to U. S. A., and England. By concentrating on the production of certain manufactures, and exporting them, U. S. A. can obtain certain types of tools and machines from Britain at a cheaper rate. Similarly, England finds it to her advantage to import dairy goods from Denmark in return for machine made articles like textiles and cutlery etc. In other words, through such transactions, the countries concerned obtain greater relative advantages.

Similar is the case with the productive activities of individuals. The same person may be an expert manager and an efficient clerk, yet he may find it to his advantage to devote his energies to the managerial task and assign the job of a clerk to another man less efficient than himself. Such specialization is a common feature of modern industrial organization and the results prove the wisdom of the method. Therefore, as Adam Smith said, 'What is prudence in the conduct

of every private family, can scarce be folly in that of a great kingdom.'

The condition determining such an exchange of goods is known as the principle of Comparative Costs. According to this, "Each country tends to produce, not necessarily what it can produce more cheaply than another country, but those articles which it can produce at the greatest relative advantage, i.e., at the lowest comparative cost. Each country will produce those articles in the production of which its superiority is most marked or its inferiority least marked." (Viner) In other words, those products are exported which are lower in price (calculated on the basis of the ruling rate of exchange) within the borders of a certain country than elsewhere and those are imported which are higher in price at home than abroad.

A difference in the cost ratios is, then, the basis of international trade. What is the factor responsible for cost differences between nations. It is Nature's partiality in distributing its gifts to nations. That is why India with its fertile soil, warm climate and cheap labour produces rice, jute, sugarcane, tea, etc., at comparatively lower costs and supplies these at low prices. Similarly, U. S. A. with its vast resources of coal, iron, petroleum, skilled labour, and capital, dominates the field of manufactures of various kinds. Its costs are low and so are its prices. The case of Japan (with its cheap skilled labour and mechanization) a formidable force in pre-war world trade, will further bear out that the form and strength of productive resources determine costs and prices of goods and create differences in the cost ratios between one country and another.

Illustration. Some assumptions will be made here in order to explain the working of the principle of Comparative Costs. We will take only two countries and only two commodities and also neglect the cost of transport. Further, costs will be represented in terms of labour costs, and it will be assumed that production is carried on under conditions of constant costs, i.e. the amount and volume of production does not affect the cost per unit.

..*

Later on these assumptions will be removed and it will be

shown that their removal does not affect the essentials of the theory.

| Country | Rice | Linen | } Products of one day's labour. |
|----------|---------|---------|---------------------------------|
| <i>A</i> | 3 Units | 2 Units | |
| <i>B</i> | 1 Unit | 1 Unit | |

Country *A* is superior in the production of both rice and linen, but it has greater relative advantage in the production of rice. For in rice its superiority is three times that of country *B*, whereas in linen it is only twice that of *B*. Hence it has a lower comparative cost in the production of rice and will specialise in this branch of production and through its exports obtain the required supplies of linen. On the other hand, though country *B* is inferior in both the fields of production, its inferiority is less marked in linen (its comparative cost of linen is less). It will, therefore, specialise in the production of linen and through its export obtain the necessary supplies of rice.

The ratios of exchange between the two commodities in the two countries are :

Country *A* 1 unit of rice for $\frac{2}{3}$ unit of linen.

Country *B* 1 unit of rice for 1 unit of linen

Thus in *B* more linen can be had for the same amount of rice, i.e., linen is cheaper in *B*, in spite of its lower efficiency of labour. In *A* more rice can be had for linen, i.e., rice is cheaper. *A* would gain through trade as long as it procures more than $\frac{2}{3}$ unit of linen in return for 1 unit of rice. *B* would gain if it gets more than 1 unit of rice in return for 1 unit of linen. In other words, both countries would gain, if *A* concentrated on the production of rice and exported it to *B*, leaving it to specialise in the production of linen and export it to *A*.

Moreover, it will be seen that such specialization increases total production. For, if both countries continue to produce the two commodities, the total product is 4 units of rice + 3 units of linen, for 4 days' labour. On the other hand if *A* pro-

duces rice and *B* produces linen, the total product is 6 units of rice+2 units of linen. The gain of 2 units of rice is greater than the loss of 1 unit of linen (2 units of rice is equal to $4/3$ units of linen in *A* and 2 units of linen in *B*). Specialisation and trade have resulted in an increase of the total product.

It was on the basis of such considerations that Cairnes made the (oft quoted) statement : "The one condition at once essential to and also sufficient for, the existence of international trade, is a difference in the comparative, as, contradistinguished from the absolute cost of producing the commodities exchanged". The same idea was elaborated by Ricardo in his celebrated example : "Two men can both make shoes and hats, and one is superior to the other in both employments; but in making hats he can only exceed his competitor by $1/5$ th or 20 per cent and in making shoes he can excel him by one third or $33\frac{1}{3}$ per cent. Will it not be for the interest of both that the superior man should employ himself exclusively in making shoes, and the inferior man in making hats ?"

So we may conclude, that whether trade is due to absolute advantage or comparative advantage, it arises through the same fact, namely that the comparative costs of production and consequently the relative values of goods differ from country to country.

Introduction of Money-costs. In actual transactions, money cost is the determining factor. The above example needs to be modified in order to represent the cost of production in terms of money rather than labour.

| | Rice | Linen | Wages per day | Cost per unit | |
|------------------|---------|---------|------------------|---------------|----------|
| Country <i>A</i> | 3 units | 2 units | Rs. 2-8-0 | Rs. .833 | Rs. 1.25 |
| Country <i>B</i> | 1 unit | 1 unit | Rc. 1-0-0 | Rs. 1.0 | Re. 1.0 |

Rice is cheaper in *A* and linen in *B*, hence the direction of trade will be the same as determined before on the basis of comparative costs of production. Such a state of affairs will continue as long as wages are related to efficiency. The

maximum efficiency of *A* is three times that of *B*, and the minimum is twice that of *B*. If wages in *B* are Re. 1/- they should not be Rs. 3/- or more or Rs. 2/- or less in *A*. That is to say, in order that the principle of Comparative Costs may apply, the ratio of money wages between the two countries must be between an upper and a lower limit.

What will happen if wages are Rs. 3/-

Cost per unit

| | Rice | Linen | } Cost per unit when wages are Rs. 3 per day in <i>A</i> , and Re. 1 per day in <i>B</i> . |
|------------------|-----------|-----------|---|
| Country <i>A</i> | Re. 1 . 0 | Re. 1 . 5 | |
| Country <i>B</i> | Re. 1 . 0 | Re. 1 . 0 | |

There is now no gain to *B* in buying rice from *A*. But as the price of linen is lower in *B*, the other country, i.e. *A* will import linen. Thus one-sided trade will ensue. *A*'s balance of payment will be passive, so that it will send out gold to *B* in payment for linen. This flow of gold will raise prices and wages in *B* and lower the same in *A*. Eventually, the direction of trade will be the same as before and comparative cost advantage will re-assert itself, with the important difference that the range of trade and the gain from trade will be narrowed down.

Similarly if wages fall to Rs. 2/- in *A*, there is again one-sided trade, though now *A* would be exporting rice without any reciprocal imports of linen. Gold would flow from *B* to *A*, raising wages and prices in *A* and lowering the same in *B*, till a new position of comparative advantage was reached.

Hence, the principle of comparative real cost applies under money economy, so long as wages bear the proper relation to efficiency. If wages are more than in proportion to efficiency production will be discouraged till (unless some artificial force keeps it there) it comes down to levels where trade is not profitable, and therefore, not practicable.

Transport costs. We had also neglected transport costs

which form an important element in all trade transactions. But the introduction of transport costs does not in any way upset the Comparative Cost principle. All that they do is to narrow down the range of trade. Suppose the exporting country pays transport costs.

| | I | | II | | |
|-----------|-----------|------------|-----------|------------|---|
| | Rice | Linen | Rice | Linen | |
| Country A | Rs. .833 | Rs. 1 . 25 | Rs. .90 | Rs. 1 . 25 | } When trans- port costs are paid |
| Country B | Rc. 1 . 0 | Rc. 1 . 0 | Rc. 1 . 0 | Rc. 1 . 15 | |

The direction of trade is the same as before. But the range of trade is narrowed and the gain from trade is less. "A goods will not be exported or imported unless the difference in its cost of production between the two countries exceeds the cost of transporting it from one to the other. The export capacity of a country does not depend, solely upon its comparative cost of production, it depends also upon the costs of transport". (Haberler).

More than two commodities. Let us apply the theory to more than two commodities. At any time, a country has resources and equipment for the production of a number of commodities. But it is not equally efficient in the production of all, i.e., its comparative advantage differs from commodity to commodity. When a country enters upon trade, it will export those commodities whose comparative cost is lower. How to decide which of these commodities will be exported and which imported ? This is done by finding out the terms of trade or the rate of interchange between exports and imports. And these depend on relative demands of the two countries. If the terms of trade are favourable, i.e., for a small amount of export large amounts of imports are obtained, very little of its own goods will have to be sent out—perhaps only one commodity. As the terms become less favourable, more goods have to be exported than before—one or two more goods may enter the export list. Thus the line of demarcation between exports and imports keeps shifting according to the changes in the terms of trade. International

trade, however, continues on the basis of comparative cost advantage, so that the presence of more than two commodities makes no essential difference to the principle.

More than two countries. Here again, there is no fundamental modification in the theory. Suppose there are more than two countries. Take a commodity *X*. Some countries will be importing it and some will be exporting it. So we divide them into exporting and importing groups. The commodity will be exported first by that country which has the lowest cost ratio, and if it cannot satisfy the total demand due to its cost rising with output, other countries will begin to export in the order of their importance in production.

Variable costs of production. It has so far been assumed that production is carried on under conditions of constant costs. This is not true in real life. How will the principle hold under decreasing and increasing costs, i.e., when the laws of increasing and diminishing returns are operating.

Suppose production of both the commodities, in both the countries, is carried on under conditions of decreasing costs or increasing returns. This implies that the marginal cost per unit falls with an increase in output and rises with a reduction in output. Country *A* is producing more of rice as it caters to the demand of both the home and the foreign markets. Similarly, country *B* is increasing its output of linen. Hence the cost for rice in *A* and for linen in *B* will constantly decrease. On the other hand, country *A* is producing less linen, as it gains by importing it from *B*. For similar reasons *B* is producing less rice. The cost of linen will rise in *A*, and that of rice in *B*. Thus the comparative advantage of *A* in rice, and *B* in linen goes on increasing with an increase in production. The range of trade will be widened, the advantages from such exchange will increase, and lead to complete specialization, on the basis of comparative cost differences. To illustrate :

| | Rice | Linen | } Cost per unit. <i>A</i> specialises in the production of rice and <i>B</i> in that of linen. |
|------------------|----------|----------|--|
| Country <i>A</i> | Rs. .833 | Rs. 1.25 | |
| Country <i>B</i> | Rs. 1.0 | Rs. 1.0 | |

| | Rice | Linen | |
|------------------|---------|----------|---|
| Country <i>A</i> | Rs. .7 | Rs. 1.35 | } Increasing cost in operation. The range of trade extends, leading to complete specialization. |
| Country <i>B</i> | Rs. 1.2 | Rs. .9 | |

Let us take the case of production under increasing cost or decreasing returns. As *A* produces more of rice and less of linen (on the basis of comparative cost differences), marginal costs will rise in the former and fall in the latter. Similarly, *B*'s cost will rise in the case of linen and fall in that of rice. This process may go on till a position of equal difference in cost is reached, resulting in a simultaneous production of both commodities in the two countries. Thus with increased production and trade, the advantages of trade will shrink and the range of trade will be narrowed down. But so long as differences in cost continue, trade will continue. "The division of labour will indeed be carried far less than under comparative cost since as it is extended, the comparative disadvantage of a country at the margin diminishes and finally disappears. But it is profitable to carry it up to that point."

| | Rice | Linen | |
|------------------|----------|----------|--------------------------------|
| Country <i>A</i> | Rs. .833 | Rs. 1.25 | Cost per unit; trade as before |
| Country <i>B</i> | Rs. 1.0 | Rs. 1.0 | |

| | Rice | Linen | |
|------------------|---------|----------|---|
| Country <i>A</i> | Rs. .9 | Rs. 1.20 | } Production under increasing cost. Range of trade has narrowed down. |
| Country <i>B</i> | Rs. .95 | Rs. 1.15 | |

| | Rice | Linen | |
|------------------|---------|----------|---|
| Country <i>A</i> | Rs. .93 | Rs. 1.17 | } Equal difference in cost. Both articles produced simultaneously in both the countries. Up to this point trade is on the basis of comparative costs. |
| Country <i>B</i> | Rs. .93 | Rs. 1.17 | |

If, however, diminishing costs operate in one branch of production, and increasing costs in the other, the position becomes somewhat unstable. The existence and range of trade will depend upon the relative strength of the forces of diminishing and increasing costs. Thus, as shown below, if the export industry is under increasing costs and the import industry under decreasing costs, when the tendency to diminishing costs is stronger, the advantage of trade will further extend.

| | | | |
|-----------|---------|----------|---|
| | Rice | Linen | |
| Country A | Rs. 833 | Rs. 1.25 | |
| Country B | Rs. 1.0 | Rs. 1.0 | |
| Country A | Rs. .9 | Rs. 1.4 | } The tendency to diminishing costs is stronger. |
| Country B | Rs. 1.2 | Rs. 1.3 | |
| Country A | Rs. 1.2 | Rs. 1.6 | } In spite of rise in the cost of export commodities, trade will have the same direction as before. |
| Country B | Rs. 1.8 | Rs. 1.5 | |

But if the force of increasing costs is stronger, the advantage will gradually disappear, the commodities will be produced simultaneously in both the countries, and the extension of the exchange of goods will stop. To illustrate;

| | | | |
|-----------|---------|----------|--|
| | Rice | Linen | |
| Country A | Rs. 833 | Rs. 1.25 | } The tendency to increasing costs is stronger |
| Country B | Rs. 1.0 | Rs. 1.0 | |
| Country A | Rs. .95 | Rs. 1.26 | } Cost differences are narrowing down. |
| Country B | Rs. 1.1 | Rs. 1.2 | |
| Country A | Rs. 1.2 | Rs. 1.28 | } Position of equal difference in costs. Both countries produce the two goods; no trade. |
| Country B | Rs. 1.2 | Rs. 1.28 | |

It can similarly be shown that if export industry is working under decreasing costs and import industry under increasing costs, the same conclusions as arrived above will hold good. If the tendency to decreasing costs is stronger trade will continue; if the opposite be the case, goods will pass out of international trade.

| Case 1 | Rice | Linen | Rice | Linen |
|-----------|----------|----------|---------|---------|
| Country A | Rs. .833 | Rs. 1.25 | Rs. .69 | Rs. 1.1 |
| Country B | Rs. 1.0 | Rs. 1.0 | Rs. .8 | Rs. .9 |

Decreasing costs are a stronger force, hence the direction of trade is the same as before.

| Case 2 | Rice | Linen | Rice | Linen |
|-----------|----------|----------|--------|---------|
| Country A | Rs. .833 | Rs. 1.25 | Rs. .6 | Rs. .95 |
| Country B | Rs. 1.0 | Rs. 1.0 | Rs. .6 | Rs. .95 |

Increasing costs are the stronger force. After a time trade will end, since the cost differences have disappeared.

Conclusion : The removal of assumptions does introduce certain modifications, but it does not invalidate the principle of Comparative Costs. The essentials of the theory remain unassailed.

FACTORS AFFECTING GAIN FROM INTERNATIONAL TRADE

According to Taussig, the extent of a country's gain from trade depends upon two factors : first, the terms of international exchange, or terms of trade, and second, the efficiency of its labour in producing exported commodities.

By terms of trade is meant the ratio at which goods exchange between two countries. Taking the example of countries A and B (page 637); if the ratio of exchange is 1 unit of rice for 1 unit of linen, A gains $\frac{1}{3}$ unit of linen, because in the absence of trade it gets only $\frac{2}{3}$ unit of linen for 1 unit

of rice (according to the rate of exchange between the two commodities in *A*). But at this ratio *B* does not gain at all and will not be tempted to engage in trade with *A*. If, on the other hand, the ratio is 1 unit of rice for $\frac{3}{4}$ unit of linen, *B* gains $\frac{1}{4}$ unit of linen at every transaction. For in the absence of trade it must give 1 unit of linen to procure 1 unit of rice; now the sacrifice is less. Any rate of exchange of 1 unit of rice for more than $\frac{2}{3}$ unit of linen but less than 1 unit of linen will confer a benefit on both the trading partners. The nearer the rate is to 1 unit of rice = $\frac{2}{3}$ unit of linen, the smaller is the gain to *A* and the larger the gain to *B*. Conversely, the closer the rate is to 1 unit of rice = 1 unit of linen, the greater is the gain to *A* and the smaller the gain to *B*. It is clear, then that the terms of trade play an important part in allocating a share of the gain to two countries having trade relationships with each other.

But, as hinted above, the terms of trade are constantly changing. What is the force responsible for variability in the terms of trade? J. S. Mill calls it 'Reciprocal Demand'. It means the relative elasticities of demand of the two trading nations for the commodity of the other, or 'the demands of the two countries for each other's product in terms of their own product'.

The rate of exchange between the two countries will be one at which equilibrium is established, or at which the value of a country's exports is equal to the value of its imports. The country with an inelastic demand is prepared to give more of its commodity for a certain amount of the other's when a shortage in the supply occurs, (e.g. if *A*'s demand is inelastic, it will give more rice for a unit of cloth). The terms of trade will be unfavourable to *A*, and consequently its gain from trade will be reduced. On the other hand, if a country's demand is elastic, it will offer less of its goods to procure a certain amount of the other's in similar circumstances; (if *A*'s demand is elastic, it will offer less rice for a unit of linen). Now, the terms of trade will become favourable to *A*, and the gain from trade will be larger. To illustrate, suppose at the rate of exchange of 1 unit of rice for $\frac{5}{6}$ unit of linen exchange between *A* and *B* is in equilibrium, i.e., (imports just pay for exports). Let us say that for certain reasons, *A*'s demand for linen increases, but *B*'s demand for rice remains as before. *A*

will be prepared to offer more attractive terms to *B*, i.e., more rice than before for the same amount of linen, in order to induce *B* to send more linen. Obviously, the greater intensity of *A*'s demand for *B*'s products will shift the terms of trade against it. But at the new rate, which is favourable to *B*, (say, 1 unit of rice for $\frac{3}{4}$ unit of linen), *B* may buy much more if its demand is elastic, or it may buy just a little more if its demand is inelastic. In the former case the terms of trade will be less adverse to *A* than in the latter case. In the former case *A*'s gain will fall by a smaller amount than in the latter case; and converse for the increase in the gain to *B*.

Thus 'Reciprocal Demand' affects not only the terms of trade, but also the gain from trade. In the words of Taussing: "That country gains most from international trade whose exports are most in demand, and which itself has little demand for the things it imports, i. e. for the exports of other countries. That country gains least which has the most insistent demand for the products of other countries."

The second factor determining a country's gain from trade is its efficiency of labour in producing exported commodities. Efficiency of labour is responsible for the differences in the cost-ratios, between the trading countries. An increase in the efficiency, widens the differences in the comparative costs, and thereby widens the field in which profitable trade can be conducted by the nations concerned. The greater the efficiency of a country's workers in its export industries the more its exports will be in demand. Thus according to Taussing's statement "that country gains most from trade whose exports are most in demand", the gain from trade will be more. Moreover is such a country, the general level of money income will be higher. But more important is the fact that their real income will also be higher. For they will be able to procure more of foreign goods in exchange for their larger output of export commodities.

In explanation of the above it must be mentioned that another important factor determining gain from trade is the level of the money income of a country. Other things being equal a high general level of income is the outcome of an efficiently conducted export industry. "The country whose de-

mand is great for the products of the other country will have comparatively low prices and low money incomes; the country whose exports are in insistent demand in the other country will have comparatively high money wages and money incomes." (Taussig) For, if a country's exports are in great demand outside, it will have a flourishing export trade and the wages of the workers will be high in the export industry. This will set the tone for wages in other industries, since, under competition, labourers will tend to gravitate towards the export industry where wages are high, unless retained in other industries by their willingness to pay equally attractive wages. The opposite will be true for a country whose exports are not so largely demanded. But, as mentioned before, there is an added advantage to the country with a high level of money income. It has to pay the same for foreign goods as any other country (barring differences due to costs of transport.) Internationally traded goods have the same price everywhere. Naturally, an American with higher income will get more satisfaction from such imports than an Indian with lower incomes. "The real gain from higher money incomes is secured from the lower prices of articles of import."

CHAPTER LIII

COMMERCIAL POLICY

By Commercial Policy or Trade Policy is meant "all measures regulating the external economic relations of a country." Through the history of international exchange two main policies have held the field. These are Free Trade and Protection.

FREE TRADE

Free Trade implies freedom of international exchange. Under such a policy there are no barriers to the movement of goods from one nation to another, and exchange is allowed to take its natural course.

Protection. Protection implies restriction of trade between nations, generally exercised to give shelter to some home industry when it is faced with foreign competition. By keeping out partially or wholly the imports of commodities, an opportunity is provided for the growth and development of the home industry. This is the chief aim of protection. But in a broad sense, all measures of intervention, no matter what their ultimate objective is, if they raise any artificial impediment to the normal course of international exchange, are referred to as protective measures.

In order to decide the relative merits of these two policies, there must be some criterion or standard of judgment. The proper standard is the 'maximization of the social product.' All economic activity aims at producing wealth for the satisfaction of human wants. Obviously satisfaction will be high if the total product is high, i. e. if the social product is at the maximum. Therefore, whichever policy promotes such maximization must be deemed desirable.

The case for free trade. The basis for free trade lies in the division of labour. If we take a group of people, it will be seen that through division of labour and specialization each will produce that commodity for the making of which he is

most fitted. Exchange then takes place and confers benefits on all the participants. No doubt, each one if he made the attempt might succeed through his own efforts in satisfying his wants, but the total product and consequently satisfaction would be less than under specialization. Hence, the greater the division of labour and specialization, the greater is the gain and economic prosperity.

Apply this policy to nations and we have the justification for free trade. Because of natural and other facilities, each nation is suited for the production of some special commodity. When there is specialization, the labour and capital of a country tend to move into those channels of industry where their contribution is maximum. Such territorial specialization brings gains to all concerned and maximises their social product when international and inter-regional trade is entered into with a free flow of goods. Any obstacle to the free movement curtails the possibilities of specialization and to that extent reduces the social product. "Therefore, since the income of any commodity or nation is large just in proportion to the extent to which it specializes, the greatest possible freedom of trade is justified" (Ellsworth).

The arguments for free trade are based upon its advantages, and may be summarised as follows:-

Free trade procures imports at cheap rates. The gain from this lies in an increase in the real income in terms of goods and services. Since the foreign country has natural advantages in producing the commodity we import, any attempt on our part to produce similar goods will involve unprofitable locking up of our productive resources. "By trading we are thus enabled to free some portion of our productive resources for the satisfaction of other wants. As a result, our national income is larger by whatever these released resources produce." (Ellsworth) It is said that this argument favours consumers at the cost of producers. But such is not the case. For under free trade, though consumers gain through low prices, producers also gain as the factors of production are directed towards that part of the economy where they can contribute and therefore earn most. Specialization, be it local or international, confers benefits on the consumer and the producer alike.

Free trade makes difficult the establishment of harmful monopolies. When trade is unrestricted, healthy competition exists and there are few possibilities for the growth of monopolies. There is thus a tendency towards the improvement of industrial technique, arising from an expansion of the area of competition.

PROTECTION

Methods of giving Protection. In the present era, protection is a regular feature of the commercial policy of all countries. Various methods have been tried, depending upon the object in view and the needs of the time. In general, protection may be given in any of the undermentioned ways.

Tariffs or imports duties. These duties are charged on goods which are a rival to similarly produced home articles. They cause a rise in the prices of these goods. This gives the home producer a better chance to compete with the outsider. If the duty is very high, the price rises so high that the commodity finds no market in the taxing country. In that case home production can flourish unhampered.

Bounties. Refer to the grant of monetary help by a government to a struggling home industry to enable it to face foreign competition successfully and stand on its feet in due course of time. A new industry has high costs of production, and therefore, charges high prices for its output. If some foreign producer is able to sell at a lower price, he can be met on equal terms only if the cost of production of the home producer is lowered. Through the grant of a bounty, government meets a certain portion of the cost and facilitates the growth of the internal industry. Such assistance was given to the famous Tata Iron & Steel concern during the days of its inception and growth.

Quotas. This involves quantitative restriction of imports. A limit is placed upon the amount of foreign goods that are allowed into the home market. As soon as this limit is reached imports are terminated. Under a quota system, the home producers know how much will come from outside. They are, therefore, free to produce enough to meet the home demand.

Commercial treaties. By mutual agreement, two nations decide to extend trade facilities to each other. This generally takes the form of the Most Favoured Nation Clause. Whatever concessions are given by either nation to a third nation are automatically extended to the other contracting partner. The range of trade is consequently widened when such treaties prevail. It may also take the shape of a bilateral trade agreement, under which two nations decide to regulate their trade through a mutually satisfactory agreement.

Exchange control. The rate of exchange and the amount of foreign exchange available, depend upon our Balance of Payments, of which the most important item is export and import of goods and services. In order to maintain a desired rate, rigorous supervision of foreign trade and foreign payment becomes necessary. Exchange control is a very effective weapon in the hands of the monetary authority and facilitates the planning of foreign trade and its direction into desired channels. The last two world wars have witnessed a steady progress in the efficiency of exchange control mechanism. Clearing agreements and Exchange Equalisation Fund are devices of furthering a policy of exchange control. In as much as measures of exchange control can be utilised for diverting production into desired channels, they are protective, in character.

Exchange depreciation. Under this system, the value of a currency in terms of another is purposely lowered so as to encourage exports and discourage imports. When there is such a fall in the value of a currency, the goods of that country become cheaper to foreign purchasers. Demand for such goods is artificially stimulated, and the exports increase. On the other hand, a fall in the value of a currency in terms of another means that foreign goods become expensive for the depreciating nation. Imports are automatically reduced. Thus in the new set-up, the home industries can step up production to meet the additional demand. The effects of depreciation are, therefore, precisely the same as those of protection.

Arguments for protection. Protection is an established creed of modern commercial policy. Good or bad it has come

to stay. But whether it is a healthy policy, leading to an economic millenium or a policy fraught with hidden dangers remains to be examined. The champions of protection are often swayed by a prejudicial outlook, rather than guided by a detached, scientific perspective. "Indeed, some arguments which are scientifically quite untenable and which can be refuted in a few sentences have the greatest influence in practice, in parliament, and in the discussion of the subject by interested parties and the press." (Haberler)

Undoubtedly, some arguments for protection appear valid and convincing if judged from the standpoint of national defence, or the maintenance of a particular group or tradition. But our standard of judgment is maximisation of the social product'. Any argument on commercial policy stands or falls according as it increases the social product or lowers it.

The pauper-labour argument. The advocates of this argument assume that a country with high money wages will be undersold by a low wage country. Therefore, protection is justified by the high-wage country on the ground that it keeps out goods made in low wage countries, and eliminates injurious competition from that source. This, it is claimed, helps in maintaining high wages and a high standard of living in the protected country.

Criticisms. This argument is not always applicable. For in most cases high wages are paid because labour is more efficient, i. e. its marginal productivity is greater. Hence if the productivity or effectiveness of labour is proportionately greater in the high wage country, as compared to the low wage country, it suffers under no handicaps.

Had the pauper-labour argument been correct, the low-wage nations of Asia and Africa should have swept their economically advanced western competitors of America and Europe from the world market. High wage countries like U. S. A., and Britain would stand no chance in markets of the orient. But facts prove otherwise. These highly industrialised nations of the west continue to dominate world trade in spite of the comparatively higher wages paid. This is so because the efficiency of their labour is in keeping with the high

wages. Such industries require no protection; they merit their domination.

In all industries enjoying comparative cost advantage high wages can be paid and low prices charged, still leaving a margin of profit for the producer. It is only in industries which do not possess this advantage that high wages cannot be maintained without adequate protection. Such industries, whose very existence depends on duties are the most clamorous in publicising the pauper labour argument. On the basis of our criterion of maximum social product, these industries are a burden to the nation. Factors of production locked up in these could be profitably mobilised for use in branches of production where the nation has comparative cost advantages. Obviously then, if protection is called upon to support the artificial high wages of some 'unnatural' industry, it may be justified from some other point of view, but definitely not from that of maximising social product, which is our acid test.

The home-market argument. According to this protection restricts imports, stimulates home industries and thereby creates a home market for indigenous products. If we do not buy from a foreign supplier, we will, naturally buy at home.

Criticism. But it must be remembered that curtailment of imports will ultimately reduce exports by an approximately equal amount. If there is a gain to the import industry, there is a loss to the export industry. The loss of foreign market to the export industry will create unemployment in it and to that extent adversely affect the general prosperity of the protecting nation. Moreover, the stoppage of export industries is a serious matter as it is in that sphere that our nation has advantages of comparative costs and therefore of specialization. To develop some new industry at the cost of the export industry involves at least for some time an uneconomic allocation of productive resources, and a corresponding fall in the social product.

As Taussig says, "To cut off imports means to cut off exports also; it means simply the substitution of exchange within the country for exchange between countries." This type of exchange will impose a greater burden upon the consumers,

because the home made goods (not having comparative cost advantage) will cost more than the previously imported commodity.

Arguments for keeping money at home. This argument reflects a rabid mercantilist outlook. Its supporters claim the sympathy of no less a person than Abraham Lincoln, who is alleged to have said "I do not know much about the tariff, but I know this much, when we buy manufactured goods abroad we get the goods and the foreigner gets the money. When we buy the manufactured goods at home we get both the goods and the money."

Criticism. As Beveridge caustically remarks, "The only sensible words in it are the first eight words". In foreign trade goods exchange for goods, money is only a medium which facilitates such transfer. If money is kept within the geographical boundaries of a country and imports are prohibited, the consumers have to pay much more for the expensive home made articles. Their real satisfaction would be greater if cheaper foreign products were allowed entry. Money, after all, is the means to an end and not an end in itself. The emphasis should be on maximum satisfaction rather than on maximum money inflow. To accept the above argument is to deny the advantages of international division of labour.

Purchasing power argument, and the argument for all round protection. Agriculture explains to industry that protection to agriculture would be advantageous for industries because through protection agriculture would have more income or purchasing power which could be spent on the products of home industries. Similarly industry appeals to agriculture to support industrial protection. 'The parties who would gain by duties try to make their wishes palatable to others'. Taken to its logical conclusion, such mutual assistance would result in an all round protection.

Criticism. The more encircling a tariff, the less is the gain to the protected industry. 'For all members of that industry must now pay more dearly for all other imported goods and thus in their capacity as consumers they lose part of their gain as producers'. (Harberler)

Further, import industries gain at the cost of export industries. The more encircling is the tariff wall, the more isolated is the protecting country. It foregoes the benefits of international division of labour. Alongside of this, a less profitable use is made of the factors of production. To quote Ellsworth : 'Land, labour and capital which would have been devoted to producing exports with which to procure the article granted protection would now be transferred to the protected industries. That their productivity is lower in these lines is proved by the very fact that protection is necessary.'

Equalisation of costs argument. This is often referred to as the scientific solution of the tariff problem. On the face of it, motives of justice and fair play appear to provide the inspiration for this argument. It says, let us equalise the cost of production of the home and foreign producers and after that let the best man win.

Criticisms. Were this idea to be translated into practice, it would uproot the very basis of international trade. Trade is carried on because of differences in costs (resulting from comparative advantage). The removal of cost differences will bring down the whole fabric of trade between nations. In the words of Ellsworth: "Such a policy if consistently followed, means the complete wiping out of all the advantages from international trade, nay, the wiping out of international trade altogether. The greater the disadvantage of a country in producing a given commodity, the more labour must be given to producing it and the higher will be the expenses of the employer." This policy puts a premium on inefficiency.

OTHER ARGUMENTS

Argument based on retaliation and bargaining. Protection is justified as a measure for bringing erring nations to book. If another country restricts our goods, we pay it back in the same coin. Needless to say there is some psychological and emotional satisfaction in such a tariff-war.

Criticism. As against this it can be said that free trade gives advantages whether or not all countries are practising it. The nations which restrict imports, forego the gains of

international specialisation. To imitate their undesirable action is tantamount to cutting one's nose to spite one's face. Beveridge condenses the free trade case by saying, "If one country has good harbours, while all the rest have bad ones, it will not realise the advantages of its good harbours so fully as if all the rest had good ones also. But it will realise some advantage; it will be better off than if it too, sank rocks all round its coast." But in a world dominated by a self-sufficiency complex, this argument gains greater weight and cannot be so flippantly circumscribed.

Infant industries argument. Surprisingly enough this argument has been put forward by recognised free traders. As a matter of fact this is the one really serious argument for protection. The chief proponents were first Alexander Hamilton (U. S. A.), List (Germany) and J. S. Mill (England). According to them, there may be natural advantages in a country, favouring the growth of a particular industry, but in face of competition from strongly entrenched foreign industries, these potential enterprises fail to spring up. Therefore, it is suggested, that in the initial stages of their growth when they are comparable to infants, the state must arrange for proper protection and nurture the growing infant till it reaches full and healthy maturity. Protection must, however, be temporary. It must extend for a period long enough to assist the new industry to tide over the pangs of genesis and early growth. "At the outset the domestic producer has difficulties and cannot meet foreign competition. In the end he learns how to produce to best advantage and then can bring the article to market as cheaply as the foreigner, even more cheaply." (Taussig)

Criticism. As stated before, this argument is advanced by free traders. Its theoretical validity cannot be disputed. But the danger of such protection is two-fold. The first is due to the difficulty of deciding what particular industry can rightly be termed infant. And then, once protection is given and an industry develops in the sheltered economy, the realization that it is not an infant (i.e. it does not have the requisite natural advantages) cannot easily lead to the withdrawal of protection. If at all such withdrawal is made, it is bound to bring in its wake economic dislocation and untold suffering—at least in

the short period. That is why once an industry is protected, even if it is found unsound, vested interests are created who fight any proposals for eliminating protection tooth and nail.

Secondly, experience has taught us the truth of the saying, once an infant always an infant. Protected industries tend to become supine and depend more and more upon state support, so that their existence, far from maximising social product, reduces the sum of national welfare. 'Even when the infant becomes a powerful giant he is unwilling to relinquish his teething ring'.

Protection to safeguard against dangers of specialised industries. The policy of keeping all one's eggs in the same basket is fraught with numerous dangers. For in a period of economic depression, or a war, the national economy would receive a serious set back. The pangs of adjustment and shifting of resources from one enterprise to another would further lacerate the wound. To avoid such dark possibilities, protection is advocated. Its assistance can be summoned to diversify production which 'would result not only in a higher average national income in the long run, but also in the manifold benefits of greater stability.'

Criticism. The argument has reason and power. But experience proves that certain types of depression (caused by trade cycles etc.) have hit protected countries harder than non-protected ones. U. S. A., for example, felt the impact of the pre 1931 depression more than did England although it was better protected. To follow a protective policy so as to lessen the shock of war time adjustments 'would be so costly in terms of lowered standards of living as to be out of the question for most countries'.

One of the fears of specialization is that other nations reach industrial maturity and reduce foreign imports. This is one of the reasons for decrying specialisation. But such fear is ill founded. The rapid industrial progress of western nations has not extinguished trade between them, and specialization still has a wide scope.

The argument fails to take cognisance of the sacrifices

involved, in terms of loss of efficiency, higher cost to producers and prices to consumers. And is it "not better to open up the channels of international trade as a means of reducing national rivalries and tensions and thus of lessening the chance of war, than it is to withdraw into ourselves and thus to add rather than subtract from economic difficulties which confront nations"?

Protection to military and key industries. 'Defence is more important than opulence' is an old and oft repeated dictum. In the present era of scientific warfare this argument appears strong. For no nation can prosper if its defence is weak. Economic development is possible only in conditions of peace and security, hence protective measures resulting in such security are advantageous and cannot be criticised.

Justification for Protection. Having made a brief survey of free trade and protection, the reader would naturally raise the query that, if as has been made out, free trade ensures greater possibilities of raising the National wealth, why should protection be the order of the day and be so assiduously pursued by all nations. Some of the reasons are enumerated below.

All will agree that infant industries are in a class by themselves, and are entitled to protection on the ground of maximization of social product. Protection undoubtedly reduces the travails of genesis and thereby enables a speedy, controlled and almost frictionless transition to an industrial economy. There may be practical difficulties, no doubt, but these are not serious enough to deprive deserving and promising industries of much needed assistance. As discussed elsewhere, even free traders owe allegiance to this argument for protection.

More or less on par with the above stands the case of backward agricultural economies (see para five under 'Protection and India'). In fact, taken to its logical conclusions, this argument shades into the infant industries argument. For it is in such backward unindustrialised economies, that resources existing and potential, fail to form into full grown industrial enterprises. Nations of Asia, Africa, Central and

South America are today introducing protection for this purpose.

Another argument which justifies protection is the changed economic policy of the twentieth century. Gone is the 'laissez faire' approach of the 19th century, which preached and upheld the 'let things alone' policy and frowned upon any interference by the State in matters economic. Today the world has grown to believe in planning (to a greater or lesser extent) which obviously means, delegating to the State, powers of control of, interference with, and centralization and regularisation of all economic activities. In this era of economic planning and state interference, it is a contradiction in terms to talk glibly of free trade and its manifold blessings. How can we reconcile a policy of control of domestic economic life with a policy of free external trade? No proof is needed to show that foreign trade activities have a bearing on various phases of internal economic activities. Imagine free imports of sugar and textile in a nation where the State envisages planned production of sugar and textile! As a matter of fact planning production in any industry involves planning its labour and capital resources, its raw material and power resources etc. The planning authority must hold all strands of the economic string in its hand. It would, therefore, mean that in a planned economy (irrespective of the degree of State interference) there can be no free trade in the sense in which we have defined the term. Even if the planning authority allows freedom of trade with some specific purpose (relating to economic development along certain lines), one can not term that free trade. It would in essence be controlled free trade—which is a misnomer. To conclude, then, it can safely be maintained that as long as the State plays a dominant role in economic affairs protection must play a leading part. If in the ideal situation, humanity reaches the point where the State 'withers away' protection will have outlived its use, and will be replaced by unadulterated ideal, free trade of a type totally different from what we visualize today.

Finally comes the justification of protection on the grounds of practical politics. The doctrine of free trade is built upon certain assumptions. Given these conditions

free trade alone would be the best. But are those conditions present ? Hardly. In a world following the 'aggressive nationalism will 'o the wisp', and engaging in frequent wars to end all wars, only the impractical dreamer would advocate undiluted free trade. Defence, self-sufficiency, full employment, ideological differences etc, warrant the use of economic and political weapons as bargaining counters, and, therefore, by the pressure of circumstances, protection becomes the reigning imperative.

In the light of the above, we should give due weight to the Infant industries argument, the diversification of industries argument, and the defence and retaliation arguments. Free trade, may, in the present context of world affairs, bring temporary prosperity to a nation, but it would be like living on borrowed time. It is not enough to maximise Social product for a short period, but rather to follow a policy which will ensure maintenance of a certain standard of living and gradually raise it to higher levels. Judicious protection is, therefore, justified.

PROTECTION AND INDIA

In India the infant industry argument assumes a far greater importance than elsewhere. That is why, selective or discriminating protection is suggested without violating any canons of free-trade, as a remedy for certain economic ills.

Our economic and political background is one of foreign domination by a highly industrialised and commercial nation. On many an occasion, the commercial interests of India were subordinated to that of the foreign ruler, with the result that our commercial and economic policy had perforce to toe the line of the alien master. In the light of this it is not surprising that Indian industries have been deprived of opportunities for healthy growth; Indian agriculture has continued in the age long rut of eking out a bare living for the tillers of the soil; and Indian cottage industries have succumbed in face of competition from foreign manufactures. The net result is a fall in our social product.

None can deny India's possession of rich natural resour-

ces. Our country is rich in raw material, in sources of power and in human resources. It has immense possibilities of industrial growth and expansion. Faced as we are with competition from experienced, advanced and strongly entrenched foreign producers, the only way to develop our industrial potential is to shelter it during its infancy and early growth. Such a protective policy will raise the national income. (A study of discriminating protection in India proves beyond doubt the possibilities of rapid growth under favourable conditions.)

It is not for a moment suggested that all round protection should be given, nor is it suggested that any industry should be termed an infant just to merit state help. Rather, there should be thorough investigation and careful selection of industries which appear to have a bright future, and then only should they be nursed through a protective policy, till they reach their full stature. Once this position of stability is reached, protection should be withdrawn. As an instance reference may be made to the Tata Iron and Steel Works, which could not have grown to its present strength without adequate protection. But now, it is strong enough in certain branches and has ceased to receive state help in those particular fields.

Then again, India's being an agricultural country means that its economic development cannot be brought about at the desired speed unless proper protection is given to a number of productive enterprises. In the words of Pigou: "The case for protection with a view to building up productive power is strong in any agricultural country which seems to possess natural advantages for manufactures. In such a country the immediate loss arising from the check to the exchange of native produce for foreign manufactures may well be outweighed by the gain from the greater rapidity with which the home manufacturing power is developed. The 'crutches' to teach the new manufacturers to walk, as Colbert called protective duties, may teach them this so much earlier than they would have learned it if left to themselves, that the cost of the crutches is more than repaid."

Finally, protection may be advocated not from the point

of view of maximum social product, but from that of practical politics. In a world torn with strife and power politics, no nation can neglect its defence. This automatically implies the growth of virile nationalism leading to attempts towards economic self sufficiency. India has to retain her newly achieved independence. It must, therefore, have a strong defence and a diversification of its industries. The ideal state of affairs would be that in which there were no tension between one nation and another, and the channels of international trade and commerce were thrown open to all. But so long as sanity does not prevail in international relations, and man rushes from one world conflagration to another, each nation will have to look after its own interests, foregoing wealth and welfare that could have otherwise been possible.

IMPERIAL PREFERENCE

Meaning. It implies the formation of a group of several nations, bound by a common tie, each showing preference for the goods of the other, as against the goods of nations outside that group. Historically speaking the term denotes a group formed by nations belonging to the British Empire. In practice, lower duties are charged from members and higher from non members.

Origin. In the last decade of the 19th century, Great Britain was faced with serious competition from products of other European countries, in foreign markets. A large part of the actual and potential markets of Asia and Africa, as also of Canada, Australia and New Zealand was under the sphere of British political and commercial influence. To maintain such dominance, British trade policy veered towards the scheme of Imperial Preference by strengthening the ties of trade between nations belonging to the empire.

Imperial Preference can be successful provided certain basic conditions are present. First all the parties concerned must have some possibility of give and take, and secondly, the entire area over which Imperial Preference is enforced must be, on the whole a net importer from abroad. For if it is a net exporter the non-member countries may take recourse to retaliatory measures and cause a loss to the whole group.

On the whole, a policy of Imperial Preference is less injurious than tariffs. The latter consists of an increase in duty and restricts the scope of trade. But Imperial Preference, though it restricts trade between one area as against the rest of the world, makes possible conditions of free trade within that area. It is a step leading to greater freedom of trade provided the area in question is large.

A serious drawback, arises, however, when we compare the gain to manufacturing and agriculturing countries. The Fiscal Commission of India 1921, remarked: "Manufactures nearly always met with competition in the foreign markets, and, therefore, a preference on manufactures is nearly always of value. The position in regard to raw materials is different. In the first place they are usually admitted free into foreign markets, so that the possibility of a preference does not arise; in the second place it is an obvious fact that to a large extent they find their markets ready made, whereas the market for manufactures has to be developed and carefully nursed. With comparatively small degree of competition to meet, it is clear that raw materials stand very much less in need of preference than do manufactures, and that the gain to them by preference is likely to be correspondingly smaller. With regard to foodstuffs, the general tendency in most countries is to admit them free and the possibilities of preference are limited." Add to this the difficulty of administration, often resulting in chaotic commercial conditions, and the ever present danger of political bickerings and trade retaliation by countries outside the golden circle.

India and Imperial Preference. Despite the majority report of the 1921 Fiscal Commission which considered Imperial Preference injurious to India, we were asked to join the scheme on the grounds of 'loyalty to the empire'. It was strongly held, however, that certain principles should govern the trade pacts with empire nations. First, that there should be no grant of preference on any article without the approval of the legislature. Previous to the legislative decision, the Tariff Board should examine the proposals. Secondly, no preference should be given so as to diminish the protection required by industries. And finally that the balance of gain and loss should not be unfavourable to India. Thus 'pre-

ference with protection' was foisted on India through a number of trade treaties ranging from 1927—32—35—& to 39. The best known of these is the famous Ottawa Pact of 1932.

A post-mortem of Imperial Preference in India shows that any gain we may have had is negligible. There are many facts to prove this. First, India's exports have for the large part consisted of raw materials and foodstuffs, which require no preference. Moreover, as similar raw materials and foodstuffs are produced by other empire countries also, we had to face a stiff competition within the imperial structure. Secondly, the only market for Indian manufactured coarse quality goods was outside the empire. Thirdly, India has been a backward agricultural country, whose dire need is industrial growth and expansion. The policy of Discriminating Protection can succeed, if foreign competition is held in check no matter what its source. But so long as we give preference to manufactured goods, the object of protection is defeated. "If India is to develop her industries rapidly and with minimum burden upon the consumers it is essential that the protection should be adequate against all competitive imports, irrespective of country of origin. The accepted policy of Imperial Preference will impair the effectiveness of Discriminating Protection. Inadequate protection is a serious danger." Fourthly, for articles which do not constitute an unfair competition with our goods, it is in our interest to buy from the cheapest supplier and not limit our choice to countries enjoying Imperial Preference. Fifthly, in a number of agreements with Britain there has been an absence of reciprocity, which is detrimental to us. A study of the various trade treaties will bear this out. And finally as has been pointed out by a critic, "India's abstention from the scheme of Imperial Preference would have meant a vindication of the principle of sanity in the regulation of international trade, and probably caused serious damage to the scheme".

The future of Imperial Preference. The post war years have witnessed a rapid disintegration of the British empire. The pressure of historic forces have changed the face of the imperial edifice in spite of Mr. Churchill's solemn declaration that he had not become the king's first minister to preside over the liquidation of the British Empire. With the independence

of India, Britain has lost her Asiatic sphere of influence. And yet for some Commonwealth countries there may be a voluntary inclination towards imperial preference if there are no back door tactics and a sane liquidation is allowed to their sterling balances.

DISCRIMINATING PROTECTION

The Indian Fiscal Commission 1921, appointed as a result of strong public sentiment in favour of protection, decided in favour of a policy of 'Discriminating Protection' for India.

When a certain industry, or a number of industries, which have possibilities of development, but have not shown appreciable progress because of foreign competition, are selected and given protection, the process is referred to as one of discriminating protection. This implies that protection is not general or haphazard, but is given only to deserving and promising industries.

As to how a promising industry is to be selected, the Commission laid down three conditions which must be satisfied, before protection was granted to an industry.

1. "The industry must be one possessing natural advantages, such as an abundant supply of raw materials, cheap power, a sufficient supply of labour, or a large home market."
2. "The industry must be one, which without the help of protection either is not likely to develop at all or is not likely to develop so rapidly as is desirable in the interests of the country."
3. "The industry must be one which will eventually be able to face world competition without protection".

A Tariff Board of three members was appointed to examine the claims of an applicant, and if satisfied as to the genuineness of the appeal, to recommend to the government proper measures of protection.

It must be said in favour of discriminating protection that it has brought about the rapid growth of some of the major industries of India. The Iron and Steel industry, which was the first one to be protected, has grown to healthy maturity, and is now able to face world competition without any help from the state. There has also been rapid development of the Sugar industry, the Paper industry, the Match industry and the Cotton Textile industry. Some of these—noticeably the Sugar industry—are able to meet practically all of our internal demand. Subsequent to the appointment of the new *ad-hoc* Tariff Board in 1945, more industries have sought and been granted protection.

There are two important criticisms against the policy. First is the rigidity of conditions, which hampers rapid industrial development. Instances are not lacking where the conditions for protection were interpreted in a very narrow and rigid manner, as a result of which certain deserving industries were deprived of state-assistance. An industry may not be favourably placed with regard to all the natural advantages, i.e., raw material, power, labour and market. But it should be remembered that some of these facilities arise automatically on the growth of that industry—particularly those referring to labour and market. To insist upon the presence of all these advantages at the very outset may often be unfair and lead to a short sighted policy. Thus the Glass industry was refused protection in 1928, as Soda-ash forming only 25% of the raw material was not available in India. Later in 1932 in spite of favourable recommendation by the Tariff Board, the government shelved the report and rejected the appeal. Similarly, the electric wire and cable industry, had all the facilities except the availability of raw material (which was imported), but it was not considered good enough for protection. Worse was the plight of the magnesium Chloride industry, which sought protection in 1925, against a ruthless German monopoly, but was refused on the ground that the industry can exist without protection. "The fears of the Minority Report of the Fiscal Commission that these conditions are stringent and that they will delay the industrial development of the country, have come true." The growth of the Textile industry in Japan and Lancashire, and of the Jute industry in Dundee, show that even when all natural

advantages are not present, protection granted on the basis of a few favourable factors, can prove very successful. It is, therefore, necessary that when applied to a backward country, the rules should be more sympathetically and liberally interpreted.

The second drawback is that the Tariff Board has often proved ineffective and suffers from all the disadvantages of an *ad hoc* body. Its findings have sometimes been arbitrarily rejected. Under a policy of discriminating protection so much devolves upon the strength and ability of the Board that any weakness in it is sure to have adverse effects on the whole system.

But these are not so much the defects of the system as of its application. As such there is every hope that an improvement in the method of application will rectify past mistakes. Taken by itself, the policy of discriminating protection is more sound and sensible than one of general protection. As a backward agricultural nation, India must protect its infant industries. The best results are likely to be achieved under a sensible and balanced policy of discriminating protection.

The Indian Tariff Board. The Indian Fiscal Commission 1921, favoured a policy of discriminating protection, and suggested that the work should be done through a Tariff Board (of 3 members nominated by the government), which will examine the need for protection to an industry and will make the necessary recommendations to the government. The Commission were of the opinion that the Board should be a permanent body and enjoy wide powers. But the first Tariff Board replaced by the new one appointed in 1945, is an *ad hoc* organisation. The new Tariff Board was specially entrusted with the task of formulating a tariff policy in relation to India's post war needs and 'to enquire into claims of protection or assistance from industries started or developed during war-time.'

Critical Estimate. Though the Tariff Board has functioned creditably in many ways, it is open to criticism on several grounds.

First and foremost is the fact of its being an *ad hoc* body, so that it suffers from the shortcomings inherent in any temporary organisation. Members of the Board, being uncertain of their future, may try to please the government so as to consolidate their own position. 'Impartial outlook under these conditions is a mere illusion.' It is also difficult to get really competent people on a temporary body. Further, only if members are permanent and not likely to join any business house after retirement, will they enjoy the confidence of industrialists and businessmen from whom information is likely to be sought. The transitory status of the Board is not conducive to confidence. This difficulty of ensuring secrecy (so essential for getting correct information) results in confidential information being sometimes refused or if given, being unreliable.

It is, therefore, essential that the Board should be a permanent body so as to ensure consistency and continuity of policy.' Then alone can it command technical knowledge, and take an impartial view while making recommendations resulting in a growth of a stable policy, public confidence, and of investment.

The second defect has been the limited powers enjoyed by the Board. It functions in a purely advisory capacity and its recommendations are not binding on the government. Often it investigates only such applications as are forwarded by the government. There is then, duplication of work and if the scope of investigation is limited the recommendations based on it will also be limited. A serious defect is that the Board has no powers of eliciting information. Consequently, recommendations are in danger of being based on inaccurate data or second hand information. What is needed is, that greater initiative in investigation should rest with the Board.

Lastly, in spite of the Fiscal Commission's emphasis on the need of publicity, the Tariff Board has not lived up to it. The government should publish reports immediately, whether it agrees with the Board's views or not. Such prompt publicity raises public confidence. Unfortunately, it has been otherwise. Reports were allowed to become obsolete, and sometimes it was years before they were published. Apart from

other evils, this is a waste of public funds. It is, however, encouraging to note that the new Tariff Board has shown some improvement in this direction.

And yet, it is not quite fair to criticise the working of the Indian Tariff Board, bound as it was to the chariot wheels of alien rule and economic policy. The new Board is given wider powers and has more scope for work. Now that the whole political set-up is changed and India is the mistress of her own destiny, one may anticipate greater co-operation between the government and the Board, and a change in its general attitude and working.

NOTE.— The above views require some modification in the light of the report of the Indian Fiscal Commission 1950.

CHAPTER LIV

EXCHANGE CONTROL

The modern era is one of planned economies. It has witnessed the extension of state interference in numerous branches of economic activity. When government interference with the free play of economic forces enters the foreign exchange market, it results in exchange control.

Exchange control refers to all methods of intervention, direct and indirect, undertaken by the monetary authority to influence exchange rates, or the dealings therein.

Objects of exchange control. The chief object of exchange control is to neutralise the effects of abnormal movements of funds (to or from the national currency), on a nation's currency and economy. Such movements are initiated by speculative activities, economic depression, and sometimes political uncertainty. Liquid balances flow rapidly from one money market to another, causing marked changes in the supply of and demand for some currency, and thereby in its value in terms of other currencies. The country so effected is faced with disturbances in its economy, to safeguard against which it may take recourse to exchange control.

Another objective of exchange control is to adjust fluctuations in the balance of trade. The presence of trade barriers and other protectionist devices makes automatic adjustment in the balance of trade impossible. Stronger and more direct action like rationing of currency to importers and blocking of foreign payments is necessary to correct maladjustment in the trade balance.

Sometimes exchange control may be a purely defensive action designed to counter the ill effects, on a country's economy, of restrictive measures of others countries. The remark that exchange control is contagious originates from such tendencies.

Therefore the *raison d'être* of exchange control is the desire to have a different rate of exchange from what would exist in a free market. This may take one of three shapes.

Over-valuation of currency, i.e. maintenance of a rate higher than would exist in a free market. It leads to increasing imports and in the long run damages national economic welfare; it may precipitate a depression.

Under-valuation of currency, or a rate lower than in the free market. An under-valued* currency is a depreciated currency. It leads to exports. It helps a country to reduce the shocks of a depression by letting her keep her internal prices high in the face of a depression

Avoidance of fluctuations, i.e. maintenance of a rate equal to that which would exist under conditions of long period equilibrium between the demand for and supply of that currency.

The attempt to avoid fluctuations in exchange rates and maintain them at an equilibrium level, necessitates over-valuation at one time and under-valuation at others. It has been tried in practice, and has had limited success.

To the extent to which it is successful, it ensures stability in the money and exchange markets, and thence in the economy.

Methods of exchange control. To make exchange management successful, the monetary authority must influence the supply of and the demand for currencies in the desired direction. This may be done by using direct methods or by taking recourse to indirect methods. Indirect methods by their very nature, have a limited field of operation and limited success.

Indirect methods. Prominent among these are first, tariffs or import duties, and secondly, the rate of interest. Tariffs reduce imports, and lower the supply of home currency and the demand for foreign currency. The less a country purchases from others, the smaller will be the payments it has to make. Other things remaining the same, there will be a rise in the value of the currency of the tariff imposing country. But if all nations use tariffs to the same extent, there will be no

*See the Chapter on foreign exchange.

alteration in the relative values of any of their currencies. If the duties are levied on exports, there is a fall in the demand for home currency, resulting in its under valuation. If a bounty is given to exports, more goods are sent abroad, there is greater demand for the currency and consequently a rise in its value. The second factor, that of interest rates exercises an influence on the inflow and outflow of funds. A high rate attracts funds and investments, causing an increase in the demand for and therefore, in the value of the currency. Conversely, a low rate of interest leads to an exodus of funds, and results in a fall in the value of the currency of that country.

But these indirect methods have a limited field of operation and during a period of crisis or abnormal economic conditions their effects may be negligible, or may take too long a time to be visible. At such critical junctures only strong direct methods bear fruit.

Direct methods. There have been two direct methods used for purposes of exchange control. The first is *intervention*, which implies that the government enters the exchange market as an active agent to influence supply and demand. The second is *restriction*, which refers to the official obstruction to the forces of demand and supply from entering the exchange market. The former consists of official exchange operations in the desired directions and increases transactions in the exchange market. The latter consists of the prevention of private exchange operations in an undesirable direction, and as such restricts transactions.

Intervention. "By intervention is meant foreign exchange operations undertaken by the monetary authorities with the object of influencing the exchange rates in desired directions."

Intervention is used for bringing about over-valuation, undervaluation or to maintain a non-fluctuating equilibrium rate. In the last case, the currency has to be raised in value or lowered in value according to the exigencies of the moment. To be successful in a policy of intervention the monetary authority must be in possession of adequate stocks of both home and foreign currencies, or gold which may be convertible into currencies. If the aim is over-valuation, the rate is said to be

'pegged', i.e., fixed at a higher level than what would prevail in a free market. 'Pegging' becomes necessary when the existing rate is lower than desired, i.e., when the demand for that currency is less than the supply. Hence 'pegging' involves a pushing up of demand and a restriction of supply. In order to do so a country needs large stocks of foreign currency and gold, so that as soon as the value of its currency falls below the 'pegged' rate, it may sell foreign currency and gold in exchange for its own currency and thereby create an artificial demand for its currency and keep up its value. Conversely, when under-valuation is the objective, the currency is said to be 'pegged down' i.e. its value is deliberately depressed and kept below the level which would prevail in a free market. The desire for under-valuation or 'pegging down' shows that in the free market the demand for that currency is stronger than its supply. 'Pegging down' therefore, involves a watering down of demand through an artificial stimulation to supply. This will necessitate large stocks of gold and a nation's own currency, which will be rushed into the market at the crucial moment and be utilised for purchasing foreign moneys.

Thus whatever be the objective of intervention, its success depends on the possession of adequate resources in terms of gold, foreign currency and one's own currency. Generally speaking, 'pegging down' is easier than 'pegging' as it depends on the possession of home currency, and it is easier for a monetary authority to lay its hands on or to requisition, if necessary, stocks of its own currency rather than of a foreign currency.

The exchange equalisation account. It was started by Britain in 1932, and later adopted by America, France and Switzerland. It provides the best known example of intervention in practice. A brief study of one of these accounts is, therefore, undertaken here.

Exchange equalisation account of Britain. When England went off the gold standard in 1931, there was danger of abnormal fluctuations in the value of the Pound, through intermittent influx and efflux of 'hot money' (money offered for conversion now into one currency, now into another). Fluctuations of such nature were bound to have adverse effects on the internal economy of England. To neutralise the

unhealthy effects of such movements on the normal rate of exchange, a fund was created in 1932, and called the Exchange Equalisation Account.

The function of this fund is to accumulate sufficient liquid resources (gold, foreign exchange and home currency) in order to meet any financial contingency. Its objective is not to interfere with, or manipulate artificially the normal long term trends, but only to control temporary deviations from the normal rate. In other words, if a rise or a fall in the value of the Pound reflects the real state of economic affairs, the rate so determined is normal, and the Exchange Equalisation Account will not use its resources to bring about an alteration in such a rate.

Control of the Account is vested in the British Treasury, for which the Bank of England acts as agent. To start the Account, Pounds were borrowed from the British public, and a stock of home currency was built up. But adequate stocks of home currency provided resources only for increasing the supply of Pounds in the market, i.e. it gave powers to the Account to keep the value of the Pound down to desired levels. However, in the act of keeping the value down, the Bank of England obtained supplies of gold and foreign currency, (Pounds were put on the market and exchanged for other currencies). Now the Account was equipped with resources for both under-valuation and over-valuation.

In the latter part of 1932, the Pound experienced a tendency to a fall in value. Its value had, therefore, to be bolstered up to the intended level. This brought about a drain on the gold and foreign exchange resources of the Account. When such resources were exhausted, the Exchange Equalisation Account was powerless to check further depreciation in the value of the Pound. Fortunately for it, a change in circumstances in the early part of 1933, resulted in a great demand for the Pound. This enabled the account to acquire again necessary stocks of foreign exchange for future emergencies. From that time onward, the Account has utilised its resources, sometimes for maintaining over-valuation, at other times, under-valuation, as dictated by the market conditions. Thus at times Pounds were converted into foreign currencies,

and at other times foreign currencies were converted into Pounds.

Exchange restriction. Exchange restriction refers to such actions of the monetary authority as are undertaken to restrict the freedom of foreign exchange transactions and thereby to influence the tendencies prevailing in the foreign exchange market.

Restriction originated due to the weaknesses of intervention. It represents a more drastic, direct, and effective policy. Germany was the first country to introduce Exchange Restriction, in 1931, followed by certain South American countries (notably Argentine), and some countries of Central Europe. The outbreak of hostilities in 1939 witnessed the growth of Exchange Restriction in Britain, France and the Dominion and Empire nations. India has been following such a policy ever since. As a matter of fact at the present time there are more restricted currencies than free.

To understand the working of exchange restriction, a brief study of the German system is made below, since most countries have followed (with modifications) the German pattern.

Exchange restriction in Germany. What were the forces leading to the adoption of such a policy? In and about 1931, the German currency was facing a serious danger of depreciation, as Germany had contracted (in terms of foreign currencies), large foreign debts, mostly short term loans, to build up its war-shattered economy. The payment of these debts swelled the supply of Marks and caused a fall in its value, in terms of Pounds, Dollars and Francs. The demand for German currency was negligible, as its foreign trade had shrunk to an insignificant level. The crisis was intensified by the fact that the creditors insisted upon their pound of flesh, as they anticipated the economic collapse of Germany in the near future. To make matters worse, they refused to accept payment in terms of goods. In short, there existed a serious disparity between the supply of and the demand for German currency, and unless this was adjusted, its value was likely to crash down.

Faced with these difficulties, Germany decided upon a policy of artificial over-valuation, a resolve strengthened by

its nerve-racking experiences of post war inflation, whose scars were still present.

Thus the government was faced with the task of restricting the supply of German currency so as to equate it to the demand.

Methods. To achieve its end, Germany adopted drastic measures along lines indicated below.

To begin with, all dealings in foreign exchanges were supervised and controlled by a central authority and conducted through licences issued for the purpose. The next step was to impound or requisition foreign exchange holdings of its citizens. Those in possession of foreign exchange, foreign securities, and bonds were asked to declare their holdings and to sell them to the government at a rate fixed by the state. Of this, the state retained what it required, and the balance was auctioned to those in need of foreign exchange. This resulted in the existence of two rates of exchange. One at which foreign exchange was bought by the government (necessarily lower) and the other at which foreign exchange was sold by the government (higher).

Another restrictive measure was, to allow a very small amount of home and foreign currency to be taken out of Germany for purposes of foreign travels. There was next, a complete prohibition of certain imports (classed as non-essential goods) and a rationing of other imports. A prospective importer had to obtain a license from the government and foreign exporters despatched their goods only when they were sure that such permission had been given. Germany's import policy was the creation of Dr. Schacht's brain and was referred to as his 'New Plan'.

Finally, Germany resorted to a policy of 'Blocked Accounts'. The property, securities, bank deposits and currency owned by foreigners could not be taken out of Germany. It was held by the government in an account, known as 'Blocked Accounts'. Those Germans who had to remit foreign debts, did not pay to the creditors, but deposited the amount in terms of their currency with the government, where

these were ear-marked in favour of the foreign creditor, but could not be converted into foreign currency. Foreigners, deprived of the use of these possessions, were often prepared to dispose them off at a discount, or to buy goods from Germany. In either case, Germany gained, of course at the cost of the foreign creditor. Inevitably, the presence of 'Blocked Accounts' created a black market in foreign exchange known as the 'Black Bourse'.

Effects. As a result of these drastic measures there was rapid industrial development in Germany. The elimination of exchange disorders and uncertainty reflected itself in the speedy re-instatement of German economy on a war footing. "The power that exchange control gave the Nazi Government over the activities of the German industry by rationing the supplies of necessary materials was a powerful weapon in the armoury of general economic control. The whole system was run in such a way as to screw out of the world the maximum possible amount of foreign currencies for use in purchasing the raw materials for munitions." (Crowther)

Clearing Agreements. When two countries enter into an agreement under which there is an 'offsetting of payments so that transactions do not pass through the foreign exchange markets', it is termed a Clearing Agreement.

This was introduced as a reprisal to the system of Blocked Accounts.

Illustration. Take two countries *A* and *B*. Assume that *A* has blocked the accounts of *B*. If *B* has an unfavourable balance of payments with *A* (i.e. *B* has to pay more to *A* than it receives from it), it can take steps to counter the effects of Blocked Accounts. For now *B* will freeze the payments due to *A* by making it obligatory on all its citizens who have payments to make to *A*, to remit these amounts to the central bank of *B* rather than to the creditors in *A*. *B* will then be in a position to dictate terms to *A* and insist on payment of its accounts before releasing those due to *A*.

The fact that two can play at the same game, results in *A* and *B* entering upon an agreement, under which, pay-

ments between them would be offset through their respective central banks. A citizen of country A owing money to someone in B will now deposit the amount with the central bank of his country, which in turn will pay it to some creditor in A who has to receive payment from B. Similar will be the procedure followed by a debtor in B owing money to someone in A and the central bank in B will use the amount deposited to pay one of its citizens who has lent money to a national of A.

Such agreements obviate the need of money passing through the foreign exchange market. Payments are made without any use of foreign moneys. Clearing agreements bring about equalisation of trade between two countries, and introduce a kind of barter in international transactions.

INTERNATIONAL MONETARY FUND

The International Monetary Fund is a result of the Bretton Woods Conference. The salient objectives placed by the Fund for its achievement are the following :

- (i) The fund will try to secure exchange stability.
- (ii) It stands and will try, for maximum international co-operation in the economic sphere.
- (iii) It will attempt to agument free trade between the countries joining it.
- (iv) It will make possible the multilateral convertibility of currency and thereby render more smooth the course of international trade.
- (v) It will also correct adverse balances of payments where, and when the need for such a correction arises. Each country joining the Fund will contribute a certain quota towards the common pool.

The Fund is different in constitution from the earlier American and British proposals. It is not as ambitious as was the British Currency Union plan nor is it as rigid as was

the United States proposal for the United and Associated Nations Exchange Stabilisation Fund. The latter was marked by absolute inflexibility in exchange rates fixed in terms of gold once and for good. It disallowed use of all exchange controls even in the interim period.

Not so, of course, with the I. M. F. The exchange rates can be altered within a margin of 20% without the Fund's assent and further 10% with the assent of the Fund. Also, a country wishing to maintain exchange control for a certain specified period with a view to preventing any serious dislocation to its economy, can do so without much hitch or hesitation. If even after this period, the country is not inclined to abandon its exchange control, it is possible it might be granted its choice, provided the Fund is satisfied that such a grant is essential in the interests of the country concerned. The use of exchange controls can be permitted also in cases where the demand of a country for the currency of another country has become so great that the Fund, or for the matter of that, the country whose currency is being demanded, cannot meet it.

Thus, though the gold standard still persists it does so in a new form, characterised by flexibility and a certain degree of freedom in working according to national interests. Earlier proposals had left no room for such a working.

Should India hope to benefit by associating herself with it or is it that she will lose? An authoritative section of the Indian economists is of opinion that India has more to gain than to lose by co-operating with the I. M. F. And it cannot be gainsaid that the opinion has much to recommend itself. The immediate concern for India is her own people. And economic policies will have to be formulated in a way that they can frequently be adjusted to the national needs. Being a good deal behind others on the international economic plan, we will in many cases have to make choices that may not be palatable to those ahead of us. Exchange controls, for example, would be definitely disliked by countries whose prosperity is very well founded and who hope to make more gains by free dealings. But India would not eschew the use of exchange controls till she has brought about, at least, so much of resuscitation of her drained economy as is sufficient

to give her confidence in taking up those dealings. The concession of using exchange control is a big advantage. India hopes to reap by joining the I. M. F.

Another advantage would arise out of the provision for flexibility in exchange rates. For any country having a poor industrial structure, such flexibility has immense benefits to offer. But when the country happens to be possessed not only of a weak industrial machinery but also of an insecure, outdated and undeveloped agriculture such a flexibility becomes doubly advantageous. India's agriculture is backward at present and it is possible situations might arise when her agricultural exports dwindle down so much that unless some depreciation is done to the exchange rate, the difficulty would not easily be got over. The permission to alter exchange rate to the extent of 20% is then another benefit of importance that might accrue to India from the I. M. F.

Apart from all this, there will be the advantage that India would have re-inforced her position on the international plane which till now had been made inaccessible to her for obvious political and economic reasons.

The handicaps India will suffer from joining the I. M. F. are not many. But this is not to say that there will be none of them. As pointed out above, the allocation of dollar quotas to the weaker countries has not been quite fair. And to India it has been particularly so. India's quota in the Fund is four hundred million dollars and she is entitled to draw up to 25% of her quota in a year. Four hundred million dollars are a poor allotment to a country with such huge natural resources and manpower and such great possibilities of economic advancement. India's quota should not in any case be less than is commensurate with the area of the country and the size of the population.

Moreover, a small quota makes India weak in the Fund executive. Other countries can easily ride roughshod over India's demands. One might feel that the distribution of authority in the executive of the Fund leaves vast masses of backward peoples at the mercy of a few small nations.

The I. M. F. has been rightly attacked on the count that it makes no settlement of the sterling debts. But despite all this India should look to the future of her association with the I. M. F. with confidence and optimism.

PART X
Public Finance

PRINCIPLES OF PUBLIC FINANCE

Public finance has been defined as that branch of Economics which studies the income and expenditure of public authorities and the adjustment of one to the other. For the purpose of our study public authorities include all grades of governments from the national and international to the provincial and local ones such as municipalities, district boards and even village councils. The term finance means the management of revenue and expenditure of any kind, and public finance therefore, refers to such activities of our governments.

Public finance is as old as human society, but it is only in recent times that there has been a proper appreciation of the importance of its subject matter and systematic studies have been made to determine its nature and scope. This comparative neglect of the subject in the past was due to the restricted field of state activities and the unsatisfactory way in which the finances were managed. As a result of this people thought that it was incapable of doing any good except that of providing the defence of society which was the main function of the government. It was considered best for the government, therefore, to restrict its activities merely to the political field and spend as little money as possible on other activities. At that stage the only important consideration was to keep the burden of taxation as low as possible. Moreover, it was desired to distribute this burden as fairly as possible. For this purpose the principle of "ability to pay" was discussed. This was later enlarged into that of the "least aggregate sacrifice." But things are different now and our attitude towards the scope of state activities and public finance has undergone a considerable change. The growing complexity of life in modern times and the conflict of interests in various spheres have forced the state to intervene more and more in social and economic fields and to take up an increasing number of functions. This increased scope of state activities has meant a tremendous increase in public expenditure for meeting which people have to part with a large part of their income. It has therefore, become apparent that it would not do merely to

consider revenue. Revenue and expenditure have to be considered together. The money which the state spends is for the benefit of the people. The object of government policy now is not 'least aggregate sacrifice' but 'maximum social advantage.' This means that a mere distribution of the burden of taxes fairly would not do. We have to consider the burden of taxes along with the benefits of expenditure and the sum total of these is the net advantage which people get from public revenue and expenditure. It is this which the state should maximise. In recent years there has been a further change in this principle. Now it is not only the maximisation of social advantage for one budget year but for a number of years put together that is emphasised. This leads to 'planning' of public finance. In this, since it covers a considerable number of years, the extra budgetary finances are also taken into account. It means that preparing government budgets on orthodox lines in which expenditure is balanced against revenue for each year would not do. The state has to plan for a much greater expenditure than its ordinary annual revenues would justify.

These developments in public finance have led to a remarkable change in our attitude towards state activities. People may decry the increase in expenditure in certain directions and resent paying this or that tax. But we do not believe that it is either possible or desirable for the state to cut down its expenditure in every direction merely for the sake of saving the people from paying the taxes. Most of these expenditures, if not all, we realise, are of distinct advantage to the people as a whole and whatever loss in satisfaction is sustained by the people in paying the taxes may be more than compensated by the benefits conferred on them by the public expenditure. Healthy social life, or what is called social welfare which is the object of all social organisations is not possible for people to secure without the active participation of the state with its manifold expenditure in social and economic spheres.

But this does not mean that every public expenditure is good and there can be no limit to it or every method of raising revenue is justified. Government, like the individuals, can, in many cases, waste its resources through extravagance and un-necessary expenditures. Such expenditures are un-

desirable and should be avoided, because the money can be better utilised by the individuals if it is left with them. On the other hand one particular method of raising revenue might mean a greater loss of welfare to the people as a whole than another. The test of sound finance, therefore, lies not in the amount of expenditure incurred by a government nor the amount of revenue raised by it in the discharge of its duties but in the methods of doing them and in the net benefit enjoyed by the people from the operation of state finances.

Public finance has been classified into (a) Public Expenditure (b) Public Revenue (c) Public Debts and (d) Administration.

Public Expenditure: studies the range of duties and functions performed by the public authorities and the expenditure during the course of such performance.

Public Revenue: which forms the necessary counterpart of public expenditure, deals with the manner in which public authorities get their income and the various problems connected with it.

Public Debt: deals with the use of credit by public authorities and the special problems created by it.

Administration: treats of the activities of the governmental machinery that is entrusted with the management of finances.

CHAPTER LVI

PUBLIC REVENUE

In order to perform their functions public authorities, like individuals need income or revenue. The amount of revenue needed by a Government depends on the nature and extent of functions performed by it. In modern times, with the increase in the nature and scope of state activities, governments need an ever increasing amount of revenue and have to tap all available sources to discharge their obligations successfully. The sources of public revenue have been classified in different ways by different writers. This difference is not due so much to a fundamental difference in the subject matter as to the difference in their approach and the historical peculiarities of the place they live in. We shall take a few of these classifications for our consideration. Adam Smith says that there are only two principal sources of public revenue. One, revenue from sovereign's possessions such as land or capital and two, income from the possession of wealth of the people —by which he meant taxation. Revenue from the first source, he thought, can neither be steady nor adequate. So the state has to depend for the major part of its income on taxation.

Seligman divides public revenue into 3 classes: (1) Gratuitous (2) Contractual and (3) Compulsory. The first class comprises free gifts to the state, the second the commercial revenues that arise as the result of contractual relations between the government and the citizen and the third embraces the receipts that are obtained through the exercise of sovereignty in such ways as eminent domain, the penal power, the taxing power and the police power.

Lutz makes the following classification : (1) Commercial revenues (2) administrative and miscellaneous revenues (3) Taxation (4) Public Loans (5) Subventions and grants (6) Book-keeping revenues or transfers. Mr. J. K. Mehta classifies public revenue into (1) Taxes (2) Fees (3) Duties and (4) Miscellaneous sources such as gifts, fines special assessments etc. It is obvious from these classifications that the most important distinction that can be made is between revenue

from taxes and non-tax sources. Some writers have included voluntary public loans as a source of revenue. But this is a mistake, because money raised through loans has to be paid off ultimately and has to come from other sources available to the state.

A tax has been defined as a compulsory contribution from person to the government to meet the expenses incurred in the common interest of all, without reference to special benefits conferred. The distinctive features of a tax are, therefore, that (1) it is a compulsory payment, (2) it is for the common benefit and, lastly (3) the payment made by an individual is in no way related to the benefits enjoyed by him from the state expenditure.

Those charges made by the state which do not fulfil all these conditions are non-tax revenue and they include such charges as fees, duties, fines, gifts, etc. A fee has been defined as a payment by a person to the government either for a special benefit received from the government or for a special cost imposed upon the government in connection with a government service performed for the common benefit. The most important feature of this payment is that it is not compulsory and those who pay the charges derive some special benefit which may be in proportion to the payments they make. According to this concept of fees they include all such payments as some writers call commercial revenues, industrial earnings or price and administrative revenues. Fees need not be related to the cost of performing those services for which they are paid even if such calculations were possible. They may be more or less than the cost of the service. |

Duties have been defined as those special charges levied on individuals in order to discourage them from consuming those commodities or services whose unrestricted use is believed to be inimical to social welfare. These charges are generally levied on the consumption of harmful drugs and intoxicants. Thus duties are like fees; they are not compulsory and are levied in proportion to consumption. But the distinction between them is one of object of these charges; fees are charged to restrain the consumption of goods and services not because they are harmful but in the absence of any such charges they

may be used to uneconomic extent leading to a great wastage of national resources.

Fines are compulsory contributions from a person to the state exacted with the object of deterring people from committing certain acts.

Of the various sources of public revenue taxes are the most important. They produce the largest part of the public revenue and by their very nature raise some of the most complicated problems of public finance.

Principles of taxation. In studying the principles of taxation we are faced with such problems as, what is the real purpose and justification of taxation, how much taxes are to be raised by the state and how should the total burden of taxes be distributed amongst the people.

Answers to these questions raise a host of difficulties. These difficulties are inherent in the very nature of taxation.

The problems of taxation raise issues which are not only economic in nature in the commonly accepted sense of the term; political and ethical issues are also involved along with them. The principle of taxation should take all these issues into account and present the decision as a systematic whole. From the days of Adam Smith various theories have been put forward to explain the nature and purpose of taxation. But most of these theories are, however, unsatisfactory. This is due to the fact that they do not look at the problems of revenue in their entirety. Before we study what is called the fundamental principle of taxation it will be useful to take into account some of these theories.

The first is "Financial" Theory: According to this theory a tax is regarded as being nothing more than a means of providing revenue to the state. It does not take into account the objects of the expenditure for which this money is raised or how the burden of the tax is distributed. It is merely a device for raising money with the least possible resistance from the taxpayers.

The "Benefit" Theory: According to this theory a tax is regarded as a payment for and the measure of a service rendered by the state. The means that those who get the greatest amount of benefit from state activities should pay the highest amount of tax—a position which is impossible and runs counter to the end of the state.

The "Socio-political" Theory : According to this theory the tax is regarded as a distinct instrument in the hands of the state and should be used for the attainment of various political or social ends such as the reduction of inequality of incomes, or encouraging certain industries. It is true that in modern society the instrument of tax is used for many social and political ends and that this theory is more comprehensive than the "financial" or "benefit" theories but it is rather vague and indefinite.

Ultimately we come to the theory which is accepted now-a-days more or less universally as the fundamental principle of taxation. This principle treats public finance as a whole and emanates from the end or objective of the state. The end of the state is the welfare of its citizens. In the field of public finance in order to create this welfare for its citizens the state has to undertake various activities for which use of funds or resources is necessary. The creation of public welfare is thus dependent on the expenditure of funds which have as their counterpart in public revenue. "Revenue is the means while public good is the end. The state, therefore, strives to undertake all these activities which are calculated to increase social welfare. In the modern economic order, these activities are best performed through the medium of money, that is, there is the raising of public revenues and then the use of the same in the performance of services or the undertaking of functions that are beneficial to society. Thus there is taxation, or more comprehensively revenue preceding public expenditure. The latter secures some good for the community while the former, by itself, inflicts a loss. If the net result is an increase of welfare the whole state activity is justified. The sacrifices inflicted by raising of revenue must be more than counter-balanced by the good done by public expenditure." (Mr. J. K. Mehta). The purpose of taxation is, therefore, to provide the state with the money which it uses to increase

the welfare of its people and if the state succeeds in this purpose the taxation is justified.

The extent to which taxation can be pushed up is dependent on how the money is raised and how it is spent. Taxation by itself means sacrifice on the part of the taxpayers whereas expenditure of the money raised by taxation means gain in satisfaction. Taxation should, therefore, be pushed up to that point where the marginal social sacrifice or loss in satisfaction in providing the revenue is just equal to the marginal gain in social satisfaction from these expenditures. So long as the marginal social sacrifice providing taxation is less than the marginal gain in social satisfaction from the expenditure of the revenue there is a net gain in increasing taxation. But when the point of equality between marginal social sacrifice and marginal gain in social satisfaction has reached, taxation should not be pushed any further.

Distribution of tax burden. We have seen that in the operation of public finance the loss in satisfaction sustained by the people in paying the taxes is more than compensated by the gain in satisfaction for the society as a whole from the public expenditure. If society were composed of homogenous units and if everybody were equally benefited from public expenditure there would have been no problem of the distribution of tax burden. But this problem arises because society is composed of heterogeneous elements and those who pay the taxes cannot trace any connection between the amount they are compelled to pay and the benefit they get from state services provided out of the taxes. The problem is therefore how to allocate the taxes amongst the different individuals so that they may be socially just or equitable. Three different principles have been put forward for the allocation of taxes. These are: (1) the cost to the public authority of services rendered to individual taxpayers, (2) benefit to individual taxpayers of such services, (3) individual 'ability to pay' taxation.

So far as the "cost of service" theory is concerned it is difficult first of all to estimate the cost of a certain service to a particular individual and secondly this is highly undesirable because this will mean that the state services will be performed

for those who can bear the cost and others who may need these services most will have to go without them if they cannot pay the cost. Fees may be based on this principle but not taxes.

So far as "benefit" principle is concerned we have already seen that it also cannot serve as a basis of taxation. For purposes of fees and special assessments this principle may be taken into account but not for general taxes.

(3) "Ability to pay" principle which is also called "faculty" theory is widely accepted as the most equitable way of distributing the tax burden. According to this theory every citizen should contribute in proportion to his ability. The theory appears very plausible from the point of view of equity but the difficulty arises about its measurement. Ability has been interpreted both from the subjective and objective points of view. The subjective interpretation refers to the "sacrifice" that the payment of taxes inflicts on the taxpayers, whereas objective interpretation refers to income or possession of wealth or any such criterion. From the standpoint of sacrifice three schemes of the distribution of tax burden have been advanced. These are equal sacrifice, proportional sacrifice and minimum or least aggregate sacrifice. The principle of equal sacrifice states that the money burden of taxation be so distributed that the real burden on all tax payers is equal. According to the principle of proportional sacrifice the burden bears the same ratio to all incomes. And the principle of minimum sacrifice states that the taxes should be so arranged that the burden on the taxpayers as a whole is as small as possible. The first two principles would make everybody, whether rich or poor, pay something in taxation while the third principle may absolve the poorer section from paying any taxes.

Dr. Dalton says, "*Prima facie*, it is not clear on grounds of equity, which of these is to be preferred." But judged from the point of view of the object of public finance the preference is for the minimum or least aggregate sacrifice because maximum social welfare, the object of public finance, is attained only then when the sacrifice consequent upon taxation is minimum.

In order to make the application of any of these principles possible for the purpose of taxation, taxes should be related somehow or the other with the objective measure of ability, for which generally the income of the taxpayer is taken as the index. This can be done, although rather very roughly, by discovering how the tax-rate should vary under the different principles of sacrifice. From the stand-point of rate-structure taxes may be proportional, progressive or regressive.

A tax is proportional when the same rate is charged for different amounts of income that is taxed or the rate does not change with rise in income. This means all taxpayers contribute the same proportion of their incomes.

A progressive tax is that under which the rate of tax increases or progresses with the rise in income. That is the larger a taxpayer's income, the larger the proportion which he contributes.

A tax is regressive when the tax-rate diminishes as the taxpayer's income rises; under this scheme, the larger the taxpayer's income, the smaller the proportion which he contributes.

The following table illustrates the difference between proportional, progressive and regressive taxation.

| Proportional | | Progressive | | Regressive | | |
|--------------|----------|-------------|----------|------------|----------|--------|
| Income | Rate | Amount | Rate | Amount | Rate | Amount |
| Rs. | per cent | Rs. | per cent | Rs. | per cent | Rs. |
| 3000 | 5 | 150 | 5 | 150 | 5 | 150 |
| 5000 | 5 | 250 | 6 | 300 | 4 | 200 |
| 8000 | 5 | 400 | 7 | 560 | 3 | 240 |
| 15,000 | 5 | 750 | 9 | 1350 | 2 | 300 |
| 25,000 | 5 | 1250 | 12 | 3000 | 1 | 250 |

According to the law of diminishing utility, the marginal utility of income diminishes as its size increases. On the basis of this law we can say that a tax of 20 per cent taken

from a person *A* with an income of Rs. 1000 will mean a greater sacrifice to him than what it will be to *B* with an income of Rs. 10,000. So if there is to be equality of sacrifice between *A* and *B*, *B* should contribute more than 20 per cent of his income. This means, therefore, the principle of equal sacrifice leads to progressive taxation. Consequently, the principle of proportional sacrifice leads to still steeper progressive taxation. The principle of minimum sacrifice will result in the exemption of people with income below a certain level and a very steeply progressive taxation of those whose incomes are above the exemption limit. That is so because amongst people with different levels of income a certain amount of tax to a person with a lower income causes a greater sacrifice than to another with higher income. It is to be noted in this connection that, first the conclusions about progressive taxation are based on the assumption that the relation between income and economic welfare is the same for all tax-payers. This means that individuals in the same economic position derive the same benefit from spending equal doses of their income. Similarly they suffer the same sacrifice if their income is reduced in equal dose by taxation. The validity of these assumptions has been challenged. But it can be said in their defence that no absolute rigidity is claimed on their behalf; they are mere approximations and are true to that extent. Secondly the principle of minimum aggregate sacrifice does not indicate what should be the exemption limit or the steepness of progression. They are all fixed arbitrarily. But in fixing up the exemption limit, the governments generally take into account the amount of income which is essential for the minimum subsistence of the people, from the standpoints of health and efficiency.

Whatever disagreement there may be about the theoretical exactness of these principles, progression and minimum aggregate sacrifice have been accepted by all modern governments as instruments of practical policy in determining the rate-structure of their income-tax systems. Thus, for example, the Government of India for the purpose of the income-tax (1) exempts all incomes below Rs. 3000 (2) taxes at the rate of -/15/6 including super-tax every rupee of income at the level of Rs. 3.5 lacs and above; (3) applies the progressive rate on incomes between these two levels. This can be illustrated

as follows: modern governments employ various taxes to earn their tax revenue and although progressive taxation is regarded as the most equitable, so far as equity is possible, it is only in the case of the income-tax that this principle is applied. So far as other taxes are concerned, which we will consider presently, they may be both proportional and regressive and may not conform to the principle of equity. But in judging the tax-structure of a country we have to take into account the tax system composed of different taxes as a whole. Individually some taxes may be progressive but due to other taxes the system as a whole may be regressive and inequitable. Similarly a few taxes may be regressive but others may be progressive and on the balance the whole system may be equitable.

Although all taxes are ultimately borne by individuals who pay them either out of their income or property, for the purpose of administrative convenience governments adopt various devices to collect their tax revenues by basing the taxes on different classes of objects. The adoption of some such devices not only makes the tax system complicated but often adversely affects individuals who may be utterly unaware of it and may produce effects on the economic structure of society not intended by the framers of the taxes. It is the purpose of tax analysis to investigate how different taxes affect different individuals, both directly and indirectly and what ultimate effects the taxes have on the economic organisation of society. This is done by classifying taxes into different categories and studying their incidence and effects. Taxes have been classified in various ways. But the most important one is to classify them into direct and indirect taxes. Direct taxes have been defined as those taxes which are intended to be borne by the persons on whom they are levied, while indirect taxes are levied on one set of persons in the expectation and with the intention that they will be passed on to others by the process of shifting.”*

That is, in case of a direct tax both the impact and incidence are expected to be on the same person but in case of an indirect tax they are expected to be on different persons. Income tax and inheritance tax are examples of direct taxes

*Vide Lutz, 'Public Finance'

and excise duties and custom duties are examples of indirect taxes. But this is only broadly true and no rigid distinction can be made because there may be cases where part of the incidence of indirect tax cannot be shifted, whereas there may be also cases when a part of the incidence of the direct tax can be shifted.

Before we can appreciate properly the role played by these taxes it will be helpful to ascertain the meaning and significance of the terms used in tax analysis, such as impact, incidence and effect of taxes. These terms refer to the stages through which a tax passes from its announcement to final resting place and the different reactions it produces. These reactions are not confined merely to the persons who are concerned in providing the money but also spread over the wider field of the economic structure and organisation of society.

The term impact refers to the reaction which the prospect or idea (or fear ?) of parting with money and thereby bearing the burden produces on the person called upon to pay a tax. By incidence is meant the final resting place of the burden and is said to be upon the person who ultimately pays the tax; whereas by the effects of a tax are meant the sum total of changes produced on the economic life and structure of the society as a result of the tax. Although it is quite obvious that in judging a particular tax or a tax-system we have to take into account all these aspects, yet for the purpose of tax analysis, it is necessary to distinguish one aspect from the other and study them separately. It has been suggested that it is not possible to separate one aspect from the other because in practice they are intermixed. This may be true from the practical point of view but for distributing the tax burden equitably it is essential to keep such a distinction in mind.

Persons on whom taxes are imposed or from whom they are collected need not necessarily bear the burden if they can afford to pass it over to some one else. This is done by what is called the process of shifting. This does not mean that all taxes can be shifted by those on whom they are imposed, neither can those taxes which are shifted be done so to the same extent or degree under every condition.

But it is possible to imagine that under certain conditions the incidence of a certain tax can be separated from its impact. The difference between direct and indirect taxes is based on this distinction. The process of shifting makes the equitable distribution of tax burden rather difficult and complicated. It is obvious that taxes should be distributed according to the ability of those on whom the incidence is likely to fall rather than of those from whom they are collected or on whom they are imposed. It is necessary, therefore, to discover the conditions under which taxes are liable to be shifted so that the tax burden may be adjusted accordingly. This gives special importance to the theory of shifting and incidence of taxation.

Taxes are shifted as a result of some kind of price transaction or buying and selling between two persons. If the person from whom the tax is collected can obtain a higher price for his product, he succeeds in shifting the tax to the buyer. Taxes may be shifted both forward and backward. In practice we find them generally shifted forward from the producer to the whole saler, from the whole saler to the retailer, and from the retailer to the consumer. It is only in rare cases that they are shifted backward from the retailer to the wholesaler, or from the wholesaler to the producer and even from the producer to those who supply some particular factor of production. But in whatever direction it is shifted it mostly follows the line of least resistance. We have said that taxes are generally shifted by raising the prices of the commodities which enter into exchange. The best way, therefore, to study the theory of incidence and shifting of taxes is to analyse the manner in which a tax on commodities affects their prices. The degree and character of shifting of a tax is determined by the effects it produces on the prices of the commodities. Prices, under normal conditions, are determined by the interaction of the forces of demand and supply. Prices of a commodity, therefore, can be affected normally either by influencing the forces of supply or of demand or of both. Sellers try to shift the tax by raising the price of the commodity through their control over the forces of supply. Buyers, on the other hand, resist it by their control over the forces of demand. The degree and character of shifting will depend on the respective bargaining powers of the different parties. Without going into

the details of the various complex forms of shifting and incidence under different conditions we shall concern ourselves with some broad generalisations that can be made about them. At the outset it is necessary to make clear distinction between taxes on commodities and services or indirect taxes on the one hand, and taxes on income and economic surplus or direct taxes on the other. As regards the shifting and incidence of taxes on commodities and services are concerned they are determined by the elasticity of demand and supply of these commodities. It has been said that other things being equal, the more elastic the demand for the object of taxation, the more will be the incidence of the tax upon the seller. Whereas, other things being equal, the more elastic the supply of the object of taxation, the more will be the incidence of the tax upon the buyers. In case of very elastic demand for the taxed commodity buyers will try to resist any attempt at price increase by threatening to reduce their purchase. If the tax rate is not very high sellers will grudgingly bear the incidence rather than risk a big decline in their sale. On the other hand if the supply is very elastic the sellers are in stronger position. They will shift as much of the tax as possible by threatening to reduce the supply and the buyers will be forced to yield. Elasticity is a relative term and it is very seldom we come across a commodity which has an absolutely inelastic demand. But generally speaking the demand for luxuries is more elastic than the demand for necessities. It follows from this that a tax on luxuries is less likely to be shifted than a tax on necessities. This means, therefore, that, other things being equal, a tax on necessities will raise their price by a larger amount than an equal tax on luxuries. Absolute inelasticity of supply is also very rare. But there are certain commodities, like land in well populated locality, whose supply is much less elastic, both in the short and long runs, than many other commodities. Therefore, a tax on commodities like land can be much less shifted—if it can be shifted at all—than an equal amount of tax levied on commodities whose supply is more elastic. There are a few important points to be noted about the elasticity of supply. First is the element of time. Supply may be inelastic in the short period but elastic in the long run. In the short run supply of a commodity may be inelastic, because a new tax may be imposed not anticipated by the producers and when a stock has already been

accumulated. If the goods are not of a very durable nature the producers will be forced to dispose of their stock even at the cost of the whole tax, but will regulate subsequent production thereby controlling future supply. Secondly, in comparatively short period, supply of goods, for the production of which expensive and specialised machinery and highly skilled labour are used, may be inelastic. Producers will find that to cut down production with the imposition of a tax will mean keeping the machinery partially idle, the loss of which may outweigh the amount of the tax. Moreover, they may shift a part of the tax to the skilled labourers, whose position will be weaker now, because if production is cut down some of them will be either partially employed or unemployed. For some time, therefore, producers will maintain production and bear the incidence themselves or share a part of it with the labourers or with those who supply the raw materials and whose position may be vulnerable like that of the skilled labourers. But, in the long run, they will adjust supply by restricting the replacements of machinery and investment of new capital, thereby making the supply elastic.

Shifting and incidence are also affected by the conditions of supply which may be either competitive or monopolistic. There may be cases where a monopolist is not able to shift a tax on his product or may be able to shift a part of it, whereas the same tax levied on goods produced under competitive conditions may be entirely shifted. There may be also conditions where just the reverse is true. That is a monopolist may be able to shift the entire incidence of a tax and the competitive producer may be prevented from doing so.

Direct taxes such as income tax, and death duties and taxes on economic surplus like a tax on economic rent are more difficult to shift and consequently their incidence is to a great extent on the party on which they are imposed.

The theories of shifting and incidence indicate that it is only in the case of direct taxes—where the incidence cannot be shifted—that the tax burden can be equitably distributed and be made progressive. If any state collects a large amount of its revenue through indirect taxes it does so by taxing the “necessaries” — commodities consumed by the mass of the

people. Such taxes weigh more heavily on the poor and are regressive in character. From the standpoint of equity, it follows, therefore, that if a state cannot entirely abolish indirect taxes from its scheme of taxation it should have as few of them as possible and under normal conditions they should not be on what are called "necessaries" of life.

Effects of taxation. Taxes produce different kinds of reactions on the economic life and structure of society. These reactions or the effects, as they are called, can be either good or harmful. It should be the object of all taxations to avoid completely or to minimise as far as possible the harmful effects. "The best system of taxation from the economic point of view" as Dr. Dalton puts it "is that which has the best or the least bad economic effects." But it should be emphasised again that in judging a tax system from any point of view the effects of the corresponding expenditure incurred from the proceeds of the taxes should also be considered. If the harmful effects of the tax system outweigh the net social advantages gained from the state finances then it is to be concluded that the state has failed to realise the objective—maximum social welfare—from the operation of its finances.

The effects of taxes will be harmful if they check the production of wealth or impair the growth of national dividend and obstruct equitable distribution of what is produced. Production will be checked if the tax system impairs the health and efficiency of the people and discourages savings and investments. Thus any taxation upon the poorer members of society, whether direct taxes on small incomes or taxes on necessities, will be undesirable. Because such taxes will cut down further the incomes which may not be sufficient or may be just so for the barest subsistence of life. Steeply progressive tax rates which knock down large incomes have been objected to by many writers. They think that such taxes hinder the will to work and to amass large income and impair the incentives to risk-taking. High taxes would certainly be undesirable if these were to be their outcome. But the will to work and the incentive for risk-taking are the resultants of large and complex forces of which pecuniary motive is just one. So a progressive tax rate merely by itself need not always produce such harm-

ful effects as have been feared. Moreover, public expenditure of the tax proceeds, if judiciously undertaken, can off-set greatly the adverse effects that taxation may have on savings and investments. The principle of progression in taxation has been accepted by tax payers all over the world.

We have studied taxation in all its important aspects. We finish our study by summing up what may be considered as the main characteristics of a well-designed tax system:

- (1) Fiscal Adequacy. A tax system should provide the state with adequate and dependable revenue.
- (2) Equity. It should be fair and equitable.
- (3) Economy. This does not mean merely that the cost of collection should not be unduly high but what is more important it should not adversely affect the economy of the nation.
- (4) Elasticity. The tax system should in times of emergency be capable of producing increased revenue without undue disturbance to the economic life of the people.

These characteristics, as will be obvious, are closely inter-related.

CHAPTER LVII

PUBLIC EXPENDITURE

Although it is expenditure and not income that is the governing factor in public finance, economists notably English writers have had little to say about its principles. The reasons are not far to seek. The English classical economists who propagated the *laissez faire* principle maintained that state intervention and consequently state expenditure must be kept at a minimum¹. This doctrine of limited governmental activity dominated English and American writing on public finance until recent years. But the march of events contradicted this conservative doctrine which had to be altered under pressure of necessity or expediency. And as a result, besides the primary function of civil and military protection and civil administration such social activities as education, the building and maintenance of roads also, began to be provided for.

The scope of governmental activity and hence of expenditure has increased with increased consciousness and the need to reduce the evils of individualistic system has grown.

1. "The very best of all plans of finance is to spend little and the best of all taxes is that which is least in amount" J. B. Say.

2. Total State Expenditure as a percentage of total National Income

| | 1929 | 1932 | 1933 | 1936 | 1937 | 1938 |
|---------------|-----------------|------|------|------|------|---------|
| | % | % | % | % | % | % |
| Canada | 7 | 14 | 14 | 13 | ... | ... |
| United States | 4 | 8.5 | 12 | 13 | 11 | 15 |
| Japan | 15 | 19 | 20 | 17 | ... | (42-43) |
| Belgium | 18 ^a | 23 | ... | 21 | 20 | ... |
| France | 19 | 26 | 28 | 29.5 | .. | (28) |
| Germany | 11 | 13 | 13 | ... | .. | ... |
| Hungary | 25 | 30 | 32 | 33 | 31 | 28 |
| Norway | 16 | 18 | 17.5 | 20 | 19 | ... |
| Sweden | 10 ^a | 15 | 15 | 13 | ... | ... |
| Australia | 22 | 25 | 29 | 19 | ... | ... |

Great caution should be observed in using these figures for international comparisons of the changes within each country. The figures in brackets are not strictly comparable. World's Economic Survey 1938-39, p. 58

It was felt not only necessary to protect the society from external and internal troubles, but also to improve the quality of people, a large majority of whom are under-privileged, by expanding the scope of state and local welfare activities.¹ Coming to this generation the care of the sick, the aged poor, and the unemployed has come to be regarded an obligation of society. It is now increasingly recognised that it is the business of the state to ensure that every citizen is able to enjoy the primary necessities of life—sufficient and proper food, adequate shelter, health and education services commensurate with his needs. It is widely held that the state should ensure this minimum by itself buying or producing and distributing the means of satisfying these primary wants, whenever it is apparent that the field is not being adequately covered by private enterprise.²

Thus there is a persistent tendency to increase extensively and intensively the functions of the state. Wherever individual enterprise has failed to satisfy a particular need for no other reason than it does not pay, and where individual interest is in conflict with the interest of the people, or where public agency can provide a more economical service, state agency has been necessary.

At this stage the question that arises is, whether there are economic limits to or possible maxima of governmental expenditure. Schultz answers correctly when he says, "Political philosophy gives no help, economic theory little help in defining the scope of state activity and hence of governmental expenditure. Economists and political theorists are as impartial as munition makers—they supply explosives to both sides of many controversies".³ Economists may have evaded the question by leaving it unanswered. The issue, however, is clear. The individual has needs and many of them can be most effectively satisfied through the agency of the state, that is, by means of

1. Public expenditure in America has increased from 7.1 ratio to national income in 1890 to 24.7 in 1940.

2. Schultz, *American Public Finance*, page 55.

3. U. K. Hicks—*Public Finance* page 13.

3. W. J. Schultz, *American Public Finance*, page 29.

public expenditure. This is realised today more than ever. In the post war years it has become all the more necessary to establish a close relationship between the individual and the state and consequently there has arisen the popular demand for the nationalisation of the key industries in every country of the capitalist world¹. In this demand is manifest the universal urge for the extension of the state activities.

Classification of public expenditure. Public expenditure has been variously classified by economists and there is no unanimity of opinion among them.

Nicholson's classification. J. S. Nicholson who seems to maintain an extremely limited scope for state activity divides expenditure on the basis of revenue received in return for services rendered. The ultimate object of public expenditure is not revenue. Such a classification may be useful from the point of view of the financial administrator, but it is hardly of any theoretical interest².

Plehn's classification. Prof. C. C. Plehn classifies expenditure on the basis of benefit rather than that of revenue.

¹England, the origin of the *laisse faire* theory, has nationalised its Bank of England and coal industry. In their election platform the Labour Party which is in power today promised to nationalise besides, internal transport, power and metallurgical industry.

In Poland all enterprises employing more than 50 workers were taken over by the state according to the decree concerning nationalisation of Polish industry (Jan. 1946). Simultaneously all the big commercial banks were nationalised.

In Czechoslovakia, on October 24, 1945 by a decree of the President were nationalised the large scale industry, mines and pits, electric power stations, banks and insurance companies—Nationalisation of Industry after the War, by L. Eventoo in *World Economic and World Politics*. No. 1, 1947, translated by A. B. Kharadikar.

²First, expenditure without any direct return by way of revenue, e. g. poor relief, expenditure on war; two, expenditure without direct return but with indirect benefit to the revenue e. g. education; three, expenditure with partial return e. g. education for which fees are received, subsidised railways that pay part of the expense; fourth expenditure that obtains a full return e. g. post office, gas works and generally state industries. *Principles of Political Economy*.

This classification has a fundamental basis. The distinction, however, between the different classes of benefit cannot be clear-cut as there is likely to be constant shift from one class to another with evolution which Plehn himself admits.

Shirras' classification. Shirras divides all expenditure into primary and secondary expenditures. "Primary expenditures include all expenditures which governments, worthy of the name of governments, are obliged above everything else to undertake, viz., defence, law and order and the payment of debts." Such a classification is unsuitable today when a distinction between primary and secondary functions of this kind cannot exist due to the fundamental changes in the views of men regarding the functions of the state.

Public expenditure has also been divided into protective, commercial and developmental on the basis of the nature of the economic function performed by the state¹. The division, however, is not clear-cut. Commercial and developmental expenditures are in a way protective also and even if protective expenditure could be defined, the overlapping of commercial and developmental expenses would be difficult, if not impossible to avoid².

Robinson. According to Robinson expenditure may be productive or unproductive. "Any state expenditure which directly or indirectly develops the natural or human resources of the nation or leads to their more economical use may be expected to increase national prosperity by increasing the national wealth, and may thus be expected ultimately to pay for itself given the important qualification that the gain due to increased expenditure is not less than the loss caused by heavier taxation"³. This is more a principle which should guide public expenditure than a classification.

¹Adam, *Finance* P. 1.

²J. K. Mehta, *The Nature and Classification and Principles of Public Revenue and Expenditure*, P. 20.

³M. E. Robinson, *Public Finance*, p. 7.

Professor A. C. Pigou classifies expenditure into two classes, exhaustive or real or non-transfer expenditure and transfer expenditure, that is "expenditures that purchase current services of productive resources for the use of (government) authorities and expenditures which consist in payments made either gratuitously or in purchase of existing property rights to private persons"¹. Real expenditure implies the actual using up of resources which would have been otherwise available to the community. Transfer expenditure on the other hand involves not using up but simply transference of resources from one person to another.

Dalton draws a broad distinction between public expenditure intended "to preserve the social life of the community against violent attack whether internal or external", and expenditure intended "to improve the quality of that social life".² Another distinction drawn by Dalton is division of expenditure into grants and purchase prices. "An individual who receives public money may or may not render in return a direct *quid pro quo* to the public authority." If the individual has rendered services in return for which he receives payment the state makes a purchase from him. On the other hand if he receives public money or money's worth without contributing anything the state makes him a grant. Grant consists either of money or of services such as free medical services, or education or old age pensions, poor relief contributions from general funds to social insurance schemes. Payment by the state to any of its employees or to contractors are purchase prices. Dalton compares the distinction between grants and purchase prices with that between transfer expenditure and real expenditure.

¹"The former group includes expenditures on the maintenance and building up of the army, navy, air force, civil service, educational service, judiciary, post office, municipal tramway service and so on. The latter includes expenditures on the payment of interest on government debt, pension, sickness benefit and unemployment benefit, also subsidies on the production of particular kinds of commodities, sugar, milk, meat or houses; also payment made in the redemption of government debt, i.e. repurchase of government securities"—Pigou, *A study in Public Finance*, p. 19.

²H. Dalton, *Public Finance*, p. 201, p. 205.

Mr. J. K. Mehta adopts a classification of constant and variable expenditures. Expenditure is constant when it does not necessarily increase with increased use of services which are financed by it e.g. expenditure on national defence or on light houses. This expenditure "is not affected by the extent to which the individuals use, or choose to be benefited by, the services which are financed by it." Expenditure is variable when it increases with every increase in the use of public services by the people for whose benefit they are incurred e.g. law courts, public undertakings¹.

Thus we find that public expenditure has been subjected to a variety of classifications, most of which are based on certain features of expenditure. In many cases the classes are either overlapping or are not rigid as in Plehn's and Shirras' classifications, or the fundamental basis of public expenditure is ignored as for instance when revenue received is made the basis of classifications. Robinson lays down a useful principle to guide public expenditure. While Mehta's definition may have a logical basis, Pigou's classification based on the very nature of public expenditure, from this point of view, is a very satisfactory one.

Principle of public expenditure. The doctrine of maximum social advantage is the fundamental principle of public finance. Maximisation of social advantages is possible when with the objective in view, public expenditure in different directions is pushed in such a way as to yield equal marginal utility. To a statesman with an objective standard of social welfare there is the whole wealth of the community to draw upon in addition to the possibility of making loans. And since public expenditure is able to bring about changes in the wealth of a community and its distribution, the distribution of a given total of expenditure between different directions should aim at equal marginal utility.

¹"The state decides to spend a certain amount on this head (i.e., national defence)- an amount which is mainly determined by external factors and only partly by the size of the population or the value of the prosperity in the country." J. K. Mehta, *The Nature and classification and Principles of Public Revenue and Expenditure*, p. 28.

Equalisation of utilities is necessary not only of the present expenditure but also of the future expenditure. This is as true of public finance as of private finance. In fact the responsibility of the public authority is much more as it is the trustee of the future.

The effects of public expenditure however will have to be balanced by the effects of obtaining public revenue¹. Any principle of public finance will be incomplete which does not keep in view the effects of obtaining revenue. Thus not only should marginal social advantage of expenditure in all directions be equalised but also that this should be balanced by the marginal social disadvantage of obtaining revenue. Dalton has said, "this is a difficult calculus, but that statesmen must handle it as best as they can; there is no practical alternative."

In the field of practice certain rules have been laid down by Prof. Shirras. According to him there are 4 rules or canons of public expenditure: 1. Canon of Benefit, 2. Canon of Economy, 3. Canon of Sanction, 4. Canon of Surplus.

Canon of Benefit emphasises the principle of maximum benefit in public expenditure. The results of public expenditure must be to increase benefit.

Canon of Economy lays down that money should be spent economically. This follows from the first. Benefit can be maximised, when the cost to obtain it is kept at a minimum or an economic use of resources is made.

According to the Canon of Sanction an economic use of resources will be possible if there is a check on an unwise and reckless expenditure. Hence the rule that a public authority must obtain sanction to spend from a higher authority for expenses beyond a certain limit. Canon of sanction is a means to obtain economy and economy is necessary to obtain maximum benefit.

Canon of Surplus maintains that the public authority should avoid deficits in expenditure. That is, public authority

¹ H. Dalton '*Public Finance*' p.200.

ties like private persons should live within their means. This is a general rule to be observed. Loans, however, are not completely ruled out. Generally money should be borrowed for useful purposes so that the public authority has revenue enough to pay interest and build up a sinking fund to repay the principal. In emergencies, however, state cannot avoid deficit budgets, which may be essential to avoid greater damage to the financial machinery.

Public expenditure and production. Since governmental bodies undertake both exhaustive and transfer expenditures, utilising large sums of money as employer and producer of services and commodities, the production system of a country is certain to be profoundly influenced. Their action and reaction extend through the economic system as a result of diversion of resources, and may cause changes in the character and volume of production. The English economists of the *laissez faire* school ignored the results of governmental expenditure and studied the effects of the reduction of private purchasing power caused by taxation. In the final analysis, public expenditure involves a transfer of purchasing power which is most clearly seen in the cases of old age pensions, social insurance schemes and interest on loans. These give a large section of population additional purchasing power, and often increase their savings. Besides, the expenditure on education and the maintenance of health services are an investment in human resources which has its influence on the total production.

Again as Dr. Dalton points out public expenditure exercises a great influence on production due to the diversion of economic resources that it brings about between different employments and localities. In those countries where public finance or public economy has a much wider scope (because it works along certain planned direction of all economic activities towards definite ends) the extent to which diversion of resources can take place is very great. In the U. S. S. R., the First Five Years' Plan was mainly devoted to diverting resources to promote the growth of heavy industries. The main economic and political purpose of the Five Year Plan of 1916-50 on the other hand is to rehabilitate the war ravaged regions of the country, to restore industry and agriculture to their pre-war

level and then to surpass this level considerably"¹. Public expenditure is playing an important part in rebuilding and rehabilitating the countries of eastern Europe, which are nationalising their means of production and planning their economic activities as the only solution to their economic problems.

Within the framework of private property and private enterprise diversions of economic resources take place within a restricted field, as the range of economic activities of the state is narrow. However, it has been recognised that all those forms of public expenditure which increase productive efficiency more than it would increase if the funds were left in the hands of private individuals are justified. To this class belongs expenditure on railways, irrigation, afforestation and reclamation of land; second, research and invention and third, maintenance of public utility services, education, public health; and aid to insurance against unemployment and other risks.

Diversions of economic resources take place between localities when the central government make a distribution of grant to local authorities without which they cannot function properly. Areas economically undeveloped require such financial aid.

Resources may be diverted to unprofitable and unproductive ends also. A large part of public expenditure today is diverted to the making of armaments and maintenance of military services, expenditure which does not add anything to human welfare. An increase in the expenditure of the armed forces by all nations does not increase the relative security of a government; it takes away economic resources from other uses in which they would have made a direct contribution to human welfare. The community is deprived of the services of a large number of selected and also large quantities of important commodities such as iron, coal and oil, and economic welfare is reduced. To this class would also belong expenditure on domestic police, courts of justice, factory inspectors,

¹N. A. Voznesensky, *Report on the Five Year Plan 1946-50*.

expenditures which make no positive contribution to human welfare¹.

Thus a wise system of public expenditure will stimulate production by increasing productive efficiency of the people as a whole, and by diverting resources to productive channels.

Public expenditure has its influence on distribution. That system of public expenditure is desirable which tends to reduce gross inequality of incomes. A system of public expenditure which reduces inequality of incomes instead of enhancing it, contributes to economic welfare. Direct transfer of wealth improves distribution by reducing inequality, and also by adjusting individual incomes to family needs during different periods of time. Provisions of old age and widow pensions and sickness, unemployment and maternity benefits have this as one of the objectives in view. The more usual method of transfer is by the provision of free goods and services as free medical service, free education. The effect of both direct and indirect transfer is reduction of inequality of incomes.

Expenditure which confers common benefit on all members of a community as provision of good roads or fire water supply, cheap transport, undoubtedly influences distribution, but its effects on the different classes are difficult to trace².

¹"Expenditure which would be largely unnecessary if only men were a little wiser, or more imaginative, or more honest than they are," Dalton, *Public Finance*, p. 215.

²"While paying taxes is an individual affair, about one half of public expenditure goes to provide benefits which are to all intents and purposes indivisible. On the other hand, the other half of public expenditure has a very definite and socially important distribution between income classes, and it is this in which we are interested when we talk about the redistribution of income". U. K. Hicks, *Public Finance*, p. 297.

CHAPTER LVIII

PUBLIC DEBT

An important source of revenue of a public authority is borrowing. Public revenue in its widest sense includes all incomes, even the money that is borrowed. The proceeds of public borrowing are included as a part of public receipts while the payment of the principal and interest charges on the borrowed money form a part of public expenditure.

A distinction may be drawn between private credit and public credit. A public authority can raise an internal or an external loan, that is, it may borrow from those who are subject to its authority or from those who are not. An individual on the other hand cannot raise an internal loan in any ordinary sense of the word. Again, when the Government of a country borrows money from its people it spends it for the benefit of the people some of whom may be creditors themselves. The private borrower, however, uses the borrowed money either for himself or for those in whom he is interested and the lender is, if at all, only remotely affected.

Repayment of debt by a Government is made by taxing the people generally. Part of the money that is needed to pay the debts may come from the very people to whom payment will be made i.e. a taxpayer may also be a public creditor. A public creditor thus will not benefit wholly by repayment of the debt but only to the extent to which he is not taxed for such a purpose. This will not be so in the case of a private lender.

There are other points of difference also. The debtor state lives for ever and hence can make perpetual debts, a thing impossible for a private individual to do. Then the rate of interest on public loans is generally lower than that on private loans. This is explained by the higher credit of the public authority.

The Purpose of Public Borrowing. Public borrowing has assumed great importance in the public finance of modern governments. The true function of public credit is to serve

as a supplement to the other sources of revenue. The question then arises as to the circumstances, under which state should borrow. Governments have to incur regular expenditure in accordance with budget provisions but tax incomes are collected only during certain periods of the year. To enable the State to carry on its work with uniformity, borrowing becomes necessary in anticipation of revenue receipts. For example, in India, a major part of the revenue is received between the months of January and March, while during the remaining months of the year current revenue falls short of current expenditure. Government of India raises temporary loans in the form of treasury bills or ways and means advances in anticipation of revenue to meet their expenditure.

Secondly, money may be required for the development of economic resources. And since large sums of money may be required for this purpose it is better to borrow money for investment than to obtain it by taxation. The modern State has assumed many more responsibilities today; its activities are extended in various directions. Large resources are necessary to enable it to supply goods and services. For these purposes the State finds it necessary to borrow the savings of the people.

Money is borrowed for emergency purposes. Emergency calls for prompt action and increased taxation is usually not adequate for such situations, for some time is required to get the tax machine running at higher speed. Borrowing thus appears to be the only feasible method of providing immediate financial relief to governments. War and preparations for war have been the most predominant emergency for which governments have borrowed huge sums as a result of which large public debts have arisen. The costliness of modern warfare finds tax incomes to be absolutely inadequate and hence loans have been resorted to. Such borrowings have been certainly for unproductive purposes. The public debt in India for example originated with the imperialist wars fought by the East India Company, and even when the Company ceased to exist its debt and liabilities were charged on India.

Principles of Public debt. Public loans exercise a great influence on a country's national economy. Since the choice

lies between loans and taxes it is necessary to know under what conditions State should obtain money by loans rather than by taxes. From the point of view of the individual, money obtained by taxation and that by borrowing has important differences. If it is obtained by taxation it is not paid back to the people. If it is raised by means of loans, it necessitates the obligation to pay it off, i.e. it gives the individual lender a claim on the government for payment of interest and repayment of the sum borrowed.

All regular recurring expenditure should be met from taxation. This is an important principle that ought to be observed. Normal expenditure cannot be met from loans for this would entail borrowing every year and taxation would be necessary to the extent of the loans. If a recurring expenditure arises because of an unforeseen emergency loans may be contracted for the purpose.

Emergencies are of a temporary nature and such expenditure will not arise with regularity. For example, part of the money required for refugee rehabilitation, particularly, for the purpose of colonisation may be financed out of loans. This is because of two reasons. Expenditure of this nature has arisen out of abnormal conditions, and is likely to recur for a period of time. Secondly, the expenditure is of the nature of capital expenditure the usefulness of which will be spread over a long period of time. It may be possible to meet part of the debt services from the incomes resulting from such an expenditure as will be in the nature of investment.

Non-recurring expenditure may be financed out of loans. Expenditures incurred towards productive or development works are of non-recurring nature and are usually met from loans. These expenditures are in the nature of capital expenditure the benefits of which are spread over a time. Such expenditures may or may not bring into existence capital goods e.g. a loan raised for constructing school buildings does not bring into existence productive good in the sense that it is productive of immediate wealth, but does result in substantial benefit which will be enjoyed by the future years. Capital expenditures incurred in building railways or constructing dams or erecting factories are usually productive of revenue

from which interest charges may be met. All these expenditures, it may be repeated, benefit not only the present generation but also the future generation. Since benefits accrue to people in the future, it is financially sound, that the cost of such expenditures should also be distributed over the future years.

A non-recurring expenditure of another type for which borrowing on a large scale is undertaken is in the case of financing war. Debts incurred for the financing war and preparation for war have been the origin of public debts in many countries, and so far as most national governments are concerned bulk of their public debt has been due to war. In the earlier days wars used to be financed out of State hoards of treasure. Such methods naturally were found to be thoroughly inadequate to meet the demands of modern warfare.

As regards the problem, whether loans or taxes should be used to finance war, expediency has played a large part in the matter. The economic waste and destruction caused by a modern war need no emphasis. It is an emergency the cost of which is so heavy in men and materials and involves diversion of so much resources that naturally taxation alone has been found inadequate to finance it. It was held by certain classical writers notably Ricardo that war should be financed mainly by taxation. According to this view taxation would check unnecessary expenditure, avoid some of the dangers of inflation of credit and prices, and also the burden of heavy post war taxation. Expediency, however, should be the main consideration. There is a limit to which taxation can be raised. Besides, tax revenue will be inadequate. Hence the resort to large scale borrowing.

Classification of Public debts. Public loans are differently classified. They differ from one another according to the length of period for which they have been raised, conditions of repayment, the market in which loans are floated, the purpose for which they are utilised. Thus there are funded and unfunded or floating loans, redeemable and irredeemable loans, internal and external loans, productive and unproductive loans. Besides, there used to be either forced loans or voluntary loans in the early days. Forced loans were

levied by many governments. A forced loan, however, cannot be regarded as a public loan in the real sense. It has many of the characteristics of a tax. A forced loan is rare in modern finance.

Funded and unfunded debt. The distinction drawn between funded and unfunded or floating debt is roughly equivalent to that between long-term and short-term debt. Usually unfunded debts are used to mean loans which are repayable within a short period, i.e. a year; funded debts are loans repayable after a long period. Unfunded debts are incurred for filling temporary gaps in the budgets. As stated before, public expenditure is greater than public receipts during certain parts of the year. Temporary borrowings have to be made in anticipation of revenue. Funded debt is used in the sense of a permanent debt or a long period debt. Long period debts may be incurred for various purposes as land reclamation, famine relief etc.

There is no uniformity in the use of these terms. In India, for instance, a further distinction is made between unfunded and floating debt, while in most countries they are regarded as the same. A floating debt is repayable within twelve months of the date of issue. It includes Ways and Means Advances from the Reserve Bank of India and Treasury Bills. Unfunded debt is used to refer to certain interest bearing obligations of the Central Government such as post office National Savings Certificate, post office Savings Banks deposits, post office cash certificates, post office Defence Savings Certificate, post office Defence Savings Banks deposits, State Provident Fund etc.

An example of funded debt in India is the permanent or interminable $3\frac{1}{2}$ percent Government Promissory Note.

Redeemable and irredeemable debt. Loans which the government promises to pay off at some future date are known as redeemable loans. Public loans are mostly redeemable loans. Those loans for which no promise is made are known as irredeemable loans. The government is obliged to make arrangement for paying off redeemable loans either by means of taxation or by fresh loans. In any case taxpayers will have to pay

the sum required both for interest and for purposes of redemption of the loan. In the case of irredeemable loans it will be necessary to pay interest charges. Burden of indebtedness of a country is likely to increase by such loan.

Productive and unproductive debt Productive debt refers to a debt which is fully covered by assets. It is a debt which is invested and, in effect, is expected to yield a money income or to increase the productive power of a community. Unproductive debt refers to a debt which is not covered by assets or which is not expected to yield anything. This distinction between productive and unproductive loans is not very scientific, for all debts are generally productive in the widest sense of the word. A loan raised to be expended for the relief of famine affected areas may not yield an immediate income but it is certainly not barren of results. Hence such a loan cannot be unproductive. A loan can be unproductive in one sense, that is when such a use is made of it as yields no results or yields negative results, e.g. as when it is used to finance schemes which are later abandoned or in the case of war where there is wanton destruction in the belligerent countries.

Internal loan and external loan. A loan is internal if it is subscribed by nationals or institutions residing within a country. It is external, if it is subscribed by nationals or institutions residing outside the country. The Government of India can borrow money either within the country or in foreign countries. Loans raised within the country are known as rupee loans, while loans raised in England or America, sterling loans or dollar loans. The increase of wealth is caused by both internal and external loans. In the case of an internal debt repayment of principal and interest charges means transfers of wealth within the country or a change in the distribution of wealth. In the case of external loans the borrowing country escapes the necessity of raising the necessary revenue immediately. When the time of repayment comes provision has to be made to meet both interest charges and repayment of principal. Thus external loan implies transfer of wealth in two directions: firstly, transfer from the lender to the borrower, i.e. from the foreigner to the borrowing country. Secondly, transfer in the reverse direction i.e. from the borrowing to the lending country when interest and principal will be paid.

So while an internal debt causes change in the distribution of wealth within a country, external borrowing involves the necessity of transferring a part of the net income of the borrowing country to the lender country. The former is poorer by the amount transferred.

Burden of debt. In estimating the burden of public debt there are two major considerations: what is the extent of internal and of external loans, and for what purpose has the loan been contracted. A public debt involves burden of two kinds, burden in terms of money and burden in terms of loss of economic welfare. In the case of external debt the direct money burden is measured by the sum that has to be paid to the external creditors by way of annual interest charges and payment of principal. Direct real burden is measured by the loss of economic welfare which the money payments involve. Loss of economic welfare will be more or less according to the proportions in which rich and the poor of the community are made to contribute towards debt services. Real burden or loss of economic welfare will be smaller if the rich contribute more than the poor.

In the case of internal debt there is no direct money burden for the community as such. But as there is transfer of wealth from one section of the community to another there is direct real burden which increases or decreases, according as the transfer increases or decreases inequality of incomes. There would be transference of wealth from the rich to the poor by which inequality of incomes would be reduced, if for instance, the public debt consisted of Saving Certificates held by the wage earners and the middle classes while taxation consisted only of income-tax and death duties on the wealthy. A public debt of this kind would confer benefit to the community. Actual conditions are however otherwise. Public securities are generally held by the wealthy, and direct taxes cannot be progressive enough to modify inequality of wealth to a great extent. Internal debt therefore encourages unearned income and involves real burden as inequality of wealth is increased.

Both internal and external debts tend to discourage production by checking the tax-payer's desire and the ability to

save and work, and secondly, by reducing the amount available for those forms of public expenditures which would promote production.

The burden of a productive debt whether internal or external, differs from the burden of a deadweight debt or a debt which is not covered by assets of corresponding value, both internal and external. A productive debt incurred in developing the economic resources of a community either increases its productive powers in the long run, or is a means of creating public assets which yield an income sufficient to pay the debt charges. In this case, there will be no real burden as such on the community whether the creditor is living within the country or abroad. As to when a country should borrow within the country or outside will depend upon the situation of the borrowing country. An under-developed country when it requires large resources for expansion which may be too big a task to perform unaided, may find it expedient to borrow abroad, provided no political control of any kind is associated with it. The general prejudice against external loans has sound reasons for such loans are seldom obtained without some kind of economic or political control.

If a debt is borrowed for unproductive use, the results in the case of internal loans would be different from those of external loans. When a country borrows externally for financing a war the foreign resources are used up in munitions and food for the fighting forces. The borrowing country has to meet the interest charges not from any assets created, or from any increase in productive power, for no such increase has been affected, but from the country's existing production, i.e., from taxes year by year. Payment of debt charges to the lending country involve direct money burden, direct real burden, and indirect burden for the charges may adversely affect the production system of the community.

Internal deadweight debts accentuate inequality of wealth by causing transference of wealth from poor tax-payers to the wealthy public creditors and secondly cause interference in the productive powers of the community.

Redemption of public debt. There are several ways of

paying off a public debt. The usual method is to provide for the accumulation of a fund known as the Sinking Fund for the redemption of the debt. Such a fund may be built up either by a fixed sum of money that may be set aside from tax revenue, or by any surplus revenue that may arise in any given year¹. The former system is applied when the tax system is so arranged that the sum set aside annually in respect of a given loan accumulates, so that the accumulated total including interest will be sufficient to redeem the loan at the time of maturity. A Sinking Fund which is fed not from taxes but from new borrowings is no sinking fund, for in this case only new debts are replacing the old.

Where a debt is incurred for the acquisition of tangible assets in the form of capital goods, another method of building up a sinking fund would be to maintain a depreciation fund out of the yield of the capital goods. So while in the first case tax revenue is utilised for building a sinking fund, in this case revenue yield is utilised to do the same. Where revenue falls short of the sum to be set aside, the difference is made up by taxation. This method cannot be applied to all loans, however, but only to productive as distinct from deadweight debts. War debts have few assets to be set against them. Proceeds of the sale of war stores should be earmarked for debt reduction and not treated as ordinary revenue.

Conversion of Loans In order to lessen the burden of a public debt very often existing debts are converted into debts carrying a lower rate of interest. This process is known as conversion of loans. Such a thing is possible only when the existing rate of interest is lower than the rate that prevailed when the debt was floated. The state makes it possible for the creditors to make a choice between redemption of a debt and acceptance of a new loan at a lower interest rate. Really speaking it is not repayment but only exchange of new debts for old. It does not lead to redemption of a loan. As interest charges on the new loan are less, immediate burden is reduced. To this extent conversion is advantageous.

¹If a loan of five crores of rupees has to be redeemed after 10 years, the government need to tax the people to the extent of 50 lakhs or $\frac{1}{2}$ a crore every year for 10 years.

Capital Levy. Another method, much discussed after the years of the first World War, was by the imposition of a very heavy tax only once or twice. Instead of spreading the repayment of a debt over a considerable period of time, this plan undertakes to extinguish it, or a very large part of it, by a single levy on accumulated wealth. If the levy is imposed on capital it is known as Capital Levy, otherwise it is just Special Levy. Ordinarily a heavy imposition, whether imposed on capital particularly or not, will be paid out of accumulated wealth or capital in general, for, a large number of people will find it difficult to pay out of current income. Capital levy or special levy has advantage over the sinking fund method in that it is a payment for once and will not be repeated. The arguments in favour of this method are, firstly, that people need not be taxed every year and Government will be saved of the trouble of arranging for repayment of debts. Secondly, reduction of taxation in the future will reduce the bad effects of taxation on production, of course if there is no fear of fresh levies in the future. Thirdly, the unequal sacrifices made by the different sections of the community during the war can be corrected by imposing such a levy. It is unfair that the most enterprising section of the community, i.e. the youth, that fight during the war and make large sacrifices, should after getting back from the war, labour to provide interest on money while others who stayed at home, and in many cases earned well, because of these youth, were able to lend in large amounts, while they were fighting. "If it was right that young men should give their lives, it was right that rich men should give their wealth in taxation"¹. Fourthly, the burden of debt increases with a general fall in prices in the post-war period when the holders of Government securities gain at the expense of tax payers. Imposition of a capital levy will reduce the public debt, hence the burden.

Arguments put forward against capital levy are: since a heavy tax like capital levy is paid out of capital or savings, it implies less savings in the future. Secondly, it discriminates against those who have lived economically and saved. Thirdly, administrative difficulties would stand in the way

1. Quoted by G. Finlay Shirras in Science of Public Finance page 868.

of imposing such a levy. Proper assessment of trade assests, household goods and miscellaneous property presents difficulties. Then there is the difficulty of guarantee against the repetition of the levy, in future.

Whatever may be said against the imposition of a levy, social justice demands that at least a part of the enormous wealth accumulated during extraordinary circumstances such as the war, be utilised to redcem public debt and to reduce tax burden. In England, such a method was proposed after the first World War when public debts of huge dimensions accumulated. This proposal to institue a capital levy led to one of the major political controversies of the early post war years. The levy, however, was not imposed¹.

Repudiation. Repudiation is another way of getting rid of the burden of debt. A Government is said to repudiate its debt when it refuses to admit the validity of its obligations. Repudiation may be partial or complete. The best example of the former is the case of Soviet Russia in 1918 and several states of the American Commonwealth in the 19th century. Partial repudiation is inflicted when the burden of debt is lightened indirectly or in concealed form by depreciation of currency, i. e. by the issue of excessive notes which lighten the burden of debt from the point of view of the state, e. g. this happened in many countries particularly in Germany after the first World War, and in China, notably during and after the second World War.

From the economic point of view repudiation whether as a mere incident in a social revolution, or an isolated act of policy will create difficulty for the public authority concerned at least for some time, in floating further loans. Besides, in the case of an external loan there will be danger of provoking aggressive action by the creditor country against the repudiating Government. The Soviet Union had to face great provocation by the various countries in the way of trade boycotts,

¹Dalton, a great upholder of capital levy says "On this practical issue competent economists were divided among themselves and some changed sides at short notice". Public Finance p. 270. Obviously the pressure of vested interests stood on the way.

campaigns of propaganda, threat of military action and so on.

Repudiation has been renamed default, suspension of payments, transfer moratorium. In their effect they imply inability to pay, or chance of payment not too soon. Many Governments after 1929 ceased, diminished or postponed payment on their central debts. Regarding internal debts reduction of rate of interest by compulsory conversion is strictly speaking partial repudiation. Thus loans to governments carry risks. At the same time experience shows that public credit does not suffer much by these measures.

PART XI
Conditions of Economic Progress

EARLIER FORMS OF PRODUCTION

The Primitive State. Ever since man was born on this earth he has experimented with varied and diverse methods of earning his livelihood. The necessity of earning the daily bread through his direct, personal effort was so pressing that at no time could he shake off his bondage to the physical world around him. In the course of the long and arduous journey to civilised forms of life, many a time it was vainly sought to be emphasised that man by no means lived by bread alone; but the circumstances of life every time made him realise that he could not also live without it for long. Thus, more or less unaffected and unaltered by all that he could possibly conceive or improvise to lighten his routine toil, involved in earning the daily bread, his slavery to Nature continued unabated.

In the earliest phase of his life he had to depend for his livelihood on those things around him on which he could easily lay his hands. Living in jungles and on hills, for then the earth's surface mostly abounded in these, he had to pluck fruits and kill animals to satisfy his hunger. He lived long in that state, when he also learnt how to make use of the skin and bones of the animals he hunted on. And, after the discovery of fire, he learnt as well how to cook his food. The fat that he obtained from the animals he killed he began to use now for lighting and cooking purposes.

In the manner and method of satisfying his wants man soon distinguished himself from all other living species. For example, while all others had accepted the objective conditions of life as they had found them, man never tolerated the discomforts of the physical world around him. And it was mainly for this reason that, in the long course of his evolution on this earth, he seldom took anything as unalterable or unchangeable. On the contrary, he constantly tried to change his environment and ceaselessly aspired to transform the quality of his life with a view to producing better and still

better results. For instance, while animals continued to live in the same state in which their earliest ancestors had lived on this earth, man began, stage after stage, to cook and store food, cover himself with animal hair and skin, hollow out caves for shelter, and make such tools and implements as could help him to increase his supply of food. He was thus in a state of perpetual restlessness, always trying to create conditions of ease, comfort, protection and, above all, security of life.

And it was this untiring effort of his, directed to the creation of conditions of security, which led him to effect some of the greatest transformations in the quality of his life. For example, when he found that he could not always be sure of catching fish or killing animals just in the hour of his need, he became painfully conscious of the uncertain and precarious nature of his earthly existence. He began to domesticate the wild animals with a view to having a constant supply of food, instead of killing them when he felt hungry as he used to do before. This novel idea of his had far-reaching influences on the subsequent course of his economic evolution.

Thus he now came to depend for his livelihood on a fully secured supply of food. And it may be noted that from this followed also some additional gains. For example, from these domesticated animals he could get not only meat, fat, skin and bones, but also such rarities as milk, butter, cheese, etc. And as domesticated cattle required expansive grass lands to be used as grazing ground, the earth's surface now began to be parcelled out in clearly demarcated units, each belonging to one or another group of individuals, to be used for growing grass for feeding the cattle.

The Agricultural Stage. The desire for convenience and advance in civilisation in human history have been closely associated with each other. Hard and irksome life compelled men to search for convenient means of living. In the measure in which they succeeded in making life convenient and comfortable the quality of life also improved and came to be described as civilised. As men succeeded in making their lives more convenient and comfortable, they also came to be

recognised as more civilised. For all those factors which go to make life easy and comfortable are also regarded as civilising factors in human history. Comfort, however, does not only consist in doing a job without much bodily discomfort; this term has rather to be understood in a much wider sense, which would include consideration of all those factors which ordinarily go to make life a pleasant and joyous experience.

It was this insatiable desire of man for convenience and comfort which led him, later on, to agricultural activity. When exactly and in what part of the world it was first decided to scratch the earth's surface for raising supplies of food, one cannot say. It is probable that just a chance discovery of grain-bearing plants excited and spurred man's imagination to take to the ploughing of fields for the cultivation of such plants. Obviously, earlier when men had not remained content with other chance mercies of nature for their fare, they could hardly bear the insecurity inherent in a livelihood which was to depend on the day-to-day search of grain-bearing plants. It was for this reason, therefore, that men decided to create their own conditions for the cultivation and culture of such plants. And, naturally, once this form of activity became popular in one part of the world, slowly and gradually it spread to other parts, by the two-fold processes of transport of seeds and transplantation of plants.

Thus it would be seen that human society came to subsist mainly on a type of mixed farming in which men, cattle, ploughs, plants, manure, and the rest now began to play their respective parts in producing abundant supplies of grain, milk, meat, fruits, etc. for human consumption. And it should be noted that animals were now being used not so much for the purposes of direct consumption as for helping agriculture as instruments of production. In fact, their usefulness henceforth came to be recognised primarily as beasts of burden and as a source of power. For, not only were they being used for carrying things from one place to another, but they were also being utilised for drawing the plough to make agriculture easy and successful.

Development of agriculture, however, instead of meeting

man's many requirements or solving most of his problems, only created fresh wants and new problems. Consequently human society, far from being content with abundant supplies of food and satisfied with relatively better conditions of life, now proceeded to think of fresh devices to provide itself with even more goods and services than it had hitherto enjoyed.

The Feudal Period. Thus we come to observe that in the long chain of human evolution the satisfaction of one want only led to the creation of another and the manufacture of one commodity just opened the way for the manufacture of many more varieties of goods. Human society advanced on this familiar pattern, grew in numbers and multiplied with every return of the calendar year, so much so that when we come to that period of history which is known as the Middle Ages we find a large part of the earth's surface more or less inhabited, men engaged mostly in agricultural activity of one sort or another. While some were also occupied in the manufacture of finished commodities, others were giving all their time and energy to the transport of raw and finished materials from one place to another. Apart from these, there were some who, instead of directly producing or transporting goods, were busy looking after the affairs of men generally, for which they received regular payment, apart from exercising power and authority over the lives of other members of the society.

Throughout the medieval period the fundamental basis of life was more or less of this pattern, in which agricultural activity occupied the most important place. There were extensive tracts of land owned by individual farmers, who cultivated them with the object of producing enough grain for the requirements of their families. Whatever was left over was sold, and with a part of the cash, thus obtained, other necessary commodities, produced by other members of the community, were purchased in the market of the village or of the town. Out of the same cash rent was paid to the feudal lord, tax to the servants of the State and tithe to the parish church. The savings, if any, were set apart and put away for the rainy day.

But it will be noted that even those who were mainly engaged in agricultural activity produced, in their spare time,

goods of other kinds also. They produced these other goods primarily with a view to meeting their families' requirements of such goods. In other words, nearly every agriculturist, apart from growing crops on his field, also took part in some sort of side activity in order to fill his spare time with work to earn something extra in kind or in cash.

Next in order of importance to these were such people as chose to devote all their time and energy to the manufacture of goods. They took part in non-agricultural activity mainly with the object of selling their produce in the market and thereby satisfying their wants. And if they were also interested in agriculture that interest was only of a secondary nature. Their main occupation, in other words, was manufacture of commodities, either with their own resources or with those supplied by others. The power that was used in such production was provided by the hands of the workers. In most cases the capital and equipment which they used belonged to them. Thus, it may be noted, these handicraftsmen of the feudal period were, for all practical purposes, their own servants. There were, however, also some who worked with borrowed capital and equipment. People who had become prosperous or those who enjoyed exceptional privileges of possessing very high degree of skill employed such workers as assistants to work for them at their premises on regular daily or weekly wage.

Manufacture In the Feudal Period. Thus we find that manufacture in the feudal period used to be carried on mostly on one's own premises, in the intimate atmosphere of the domestic environment. One worked only as much as one could easily do. Since there was no pressure from above or from outside, there could be no question of any body overstraining himself at the behest of another. Moreover, while working one could take as much rest as was necessary in the interest of health or efficiency of work. As division of labour till then had not been taken to an extreme stage, productive activity had not become monotonous or ceased to be interesting in nature. And even when paid artisans worked for others, conditions of work were not very different. Even in such working establishments there prevailed the same easy and intimate atmosphere of willing, cordial co-operation.

The masters, no doubt, thrived on the labour of their servants, but they did so without taking recourse to such methods of exploitation as became associated with production in a subsequent period of economic history.

It may be noted that subsistence was the *raison d'être* of production in the feudal period. People produced primarily with the object of satisfying their wants. From this, however, one need not conclude that nobody produced any surplus. Such a conclusion would be unwarranted, specially when we have already emphasised that, while producing to meet day-to-day requirements, every body tried to produce a little more to provide for the rainy day. It was this surplus production, either in cash or in kind, which constituted one's savings. But still the consideration of profit was not the determining factor in production.

Side by side with agriculture and manufacture, when the medieval period of history was drawing to a close, commerce had also established itself as a major economic activity in many parts of the world. And it may be noted that it was as a result of this combination of agriculture, manufacture and commerce that there followed a period of widespread prosperity in the last stages of the medieval period. But not all classes of people had a share in that prosperity, i.e., while one social group became very rich, others' conditions did not show signs of any considerable improvement. Consequently, only in certain social groups there came to prevail significant measure of affluence. However, in the sunshine of that benign prosperity great advances were made in many spheres of civilised life. And it was this factor which led some historians of a later period to conclude that in the feudal times prevailed greater contentment and happiness than people could ever enjoy in the capitalist period, that followed later. There were also some who came to hold the view that in the feudal period there prevailed such a beautiful poise and balance of responsibility and service between the master and the servant, the ruler and the ruled, the clergy and the laity that living in those times was the best of earthly experience.

On a closer examination, however, such a view of history would be found to be erroneous. The fallacy inherent in

an approach like this arises from the fact that such people, in effect, are found comparing the good points of the feudal society and life with the dismal features of the rising industrial period, which intervened between feudalism and capitalism. But, as one should know, a period of transition is always accompanied with certain amount of dislocation, unrest, exploitation and misery. This was equally true of the period following feudalism and preceding capitalism.

Transition from Feudalism to Capitalism. After a lapse of time every civilisation begins to show signs of decay when it is replaced by something better. The obvious explanation of a phenomenon of this nature is that when a better and more superior mode of production, as compared to the existing one, comes to be known, men discard the latter and, along with it, also the basis of social life and accompanying civilisation, which had been the gift of the older mode of production. This explains the cause of the supersession of the feudal by the capitalist order of society.

Now, we have to distinguish these two periods in economic history from each other. In the feudal period, as we have seen, the main type of economic activity was agriculture. But in the capitalist period agriculture lost its former place of predominance. In the feudal period manufacture was of secondary importance; but under capitalism it has become the most important means of production. In the feudal period power in industrial production was provided mainly by the hands of the workers in production; in the capitalist period it is the machine that drives the wheels of manufacture. In the feudal times goods were largely produced to satisfy the wants of the producers themselves. But in the capitalist period production is carried on by a small number of people mainly with the object of earning profit. Thus while the average producer in the feudal period was also the consumer of the goods which were produced through his agency, in the capitalist period goods are produced through the efforts of some to be consumed by others. In this manner a gap occurs between production and consumption, which does not always lead to the production of goods that are socially most necessary or useful. In other words, when profit becomes the main criterion of production sometimes even

such commodities are produced as are least necessary for consumption.

When fundamental and drastic changes of such magnitude occur in economic life, transformation in social interrelations should become inevitable. Consequently, the industrialist class in the age of capitalism has assumed incomparable importance and enjoys unparalleled power in social and political life, just as in the feudal period the class of landed aristocrats enjoyed vast powers and privileges. Position of advantage or disadvantage occupied in economic life is almost always reflected in social relationships. This is why at the end of the feudal and the beginning of the capitalist period, when commerce had become nearly as important as agriculture, power and privileges were, for all practical purposes, equally divided between landed aristocracy and commercial capitalists.

CHAPTER LX

CAPITALISM

How It Came About. The modern system of industrial production is said to have begun first in England, approximately about the middle of the eighteenth century. Some people attribute the fact of England taking lead in industrial movement purely to an accident of history. But on closer examination such a view would be found incorrect. No doubt it would seem strange that some of the most important scientific inventions and discoveries of the eighteenth century should have been made mainly by British inventors and scientists. But those who are aware of the fact that the British Isles had been a singularly fortunate country to make peaceful and unhampered economic progress for centuries at a stretch would not find it difficult to conclude that under such excellent and ideal conditions, it was nothing extraordinary for the British economy to have made sustained and continuous economic advancement. Moreover, the type of resources that the British Isles possessed also enabled its people to take to the industrial road earlier than other people.

One can, therefore, say that it was the cumulative result of a number of factors which enabled British people, at a rather early stage, to take modern industrial production to a high degree of perfection. In the medieval period there had been other countries whose technique of production happened to be more advanced than that of England. But while the disturbed course of history in the medieval period prevented these countries from maintaining the lead they had established, in the modern period, with the discovery of steam as a source of power, England was the first to achieve a high degree of industrial advancement.

However, when it was known that machines could be used in the process of production, a class of people came forward, offering their abundant resources to be used as capital for building mills and factories. Most of these people belonged to the same class of commercial capitalists who at the end of the feudal period had amassed large fortunes through trade

and commerce. Apart from them, there were also others who came either from the farm or from the ranks of master craftsmen and skilled workers, i.e. persons who could manage to scrap together enough money to buy a few machines. This rising class of industrialists, big and small, found the new line of production a very lucrative proposition. And, specially after the year 1780, when the steam engine had become quite an effective instrument for driving the factory wheels, it appeared exceedingly profitable to gather together large groups of workers in big establishments, equipped with steam power.

The outcome of this tremendous revolution in the method of production was sharply reflected in ownership and in property relationships generally. The power and opportunity to produce was becoming concentrated and centralised in a few hands, while a large majority of people had to work for others for daily, weekly or monthly wage. With concentration of the power to produce in the hands of a limited number of people there followed a juxtaposition of classes and clash of economic interests. Now the owners of the factors of production and actual producers, i.e. workers, were two distinct and different classes of people. This cleavage of interests led to a trial of strength between the two groups. And in this struggle the owners almost always came on the top, while the workers were often left with their point of view unaccepted by their masters.

Change in Economic Policy. Thus the modern system of industrial production placed more economic power in the hands of the industrialists than of the workers. Nevertheless, the new industrialists were far from satisfied with the strengthening of their relative position and agglomeration of opportunities. On the contrary, they wanted more freedom and more power to manage their affairs in ways that suited their convenience most. In other words, they resented the existing laws and regulations which sought to prevent them from employing workers on terms that appeared to be most profitable for their business.

It may be recalled that throughout the sixteenth and seventeenth centuries the dominant industrial policy in Eng-

land had been the establishment of some authority to regulate conditions of work and employment in the working establishments. To the Parliament of those days it seemed right and natural that the oppressed wage-earners should turn to the legislature to protect them against the cutting down of their earnings by the competing capitalists. But the situation by the middle of the eighteenth century had rather changed. Consequently, when the employers began to make strong protests against contemporary wage regulations, the House of Commons was compelled to give up its old policy of protecting the workers and apprentices employed in the trades.

The latter half of the eighteenth century was also an age of political ferment. In Europe and specially in France political thought was becoming more and more radical. Although England at that time had already a form of parliamentary government, yet the rising industrial class was not satisfied with the political control that it so enjoyed. Industrialists were particularly unhappy with the extensive powers which the functionaries of the State had at their command in regulating economic life. What they wanted was complete freedom of action in running their business enterprises in the manner that appeared to suit their interests best.

It would appear strange, indeed, that this novel point of view of the vested interests should have found support in the writings of the contemporary economists. For example, Adam Smith, who is known as the father of Political Economy, was found advocating, in the course of his writings, a point of view which largely suited the interests of the industrialists. And, what is even more strange, that Adam Smith was not the only person who put forth and popularised the new ideology. As a matter of fact, almost all the important thinkers—Hume, Bentham, Malthus, Ricardo, Nassau Senior and the rest, who at that time appeared on the stage, one after another, put forth a point of view which was more in consonance with the capitalists' view of industrial relations than with that of the workers.

Thus the economists of that time started a tradition which is now known as Classical Economics and its exponents are known as classical economists. As the classical economists

happened to support, directly or indirectly, the contention of the capitalists, they were accused by their later critics of siding with capital. Such a criticism, however, was unfair, for it was based on a misinformed appreciation of the situation. What was after all the contribution of the classical economists? It would be appreciated that their point of view was by no means a new or novel view of industrial relations; it was at the most a generalisation of practical conclusions to which experience of industrial life had driven them along with others. From an observation of the difficulties of the industrialists they had come to realise the requirements of the new age that was dawning. And as the governing classes had already been convinced of the gains that would accrue to the community as a whole, only if they followed the new economic policy, they readily accepted the new economic theory. The result was that what had been done so far purely for reasons of expediency was now to be carried out as a matter of principle.

The Contribution of Classical Economists. Broadly speaking, the classical economists had based their case on the individual's desire to maximise personal happiness or welfare by undergoing the least pain. They credited all individuals with such normal, human incentives or impulses, and immediately came to the conclusion that if in a society all individuals pursued such a course of action, intended to enhance individual well-being, the result for the whole society would be maximum material happiness or welfare, involving minimum physical or mental pain for the community.

The corner-stone of their logic was provided by the impulse of competition. They envisaged a state of affairs in which each individual would freely compete with another to further his economic ends. And, to be fair to them, it must at once be stated that such a right and freedom of competition they contemplated not for any one section of the people only. Rather, they imagined a state of affairs in which capitalists would compete with brother capitalists, workers would compete with fellow workers, capitalists as a class would compete with the workers, peasants would compete among themselves and with the landlords, businessmen would compete among themselves and with the consumers, and so on, to secure for themselves the largest share from the national income. It

had been assumed by the classical economists that by doing so people would be automatically increasing total national wealth and human happiness.

In order to make the field of such competition free and unlimited, they advocated *laissez faire*, which meant non-interference by the State in the day to day economic life of the people. The basic idea inherent in the concept of *laissez faire* had been taken originally from the French thinkers, but its practical application, mainly in the domain of economic life, was the contribution of the classical economists. Their contention was that if the governmental machinery interfered with the economic decisions and preferences of the people individuals would not be able to produce the quantity and quality of goods that they desired, and in such a case material welfare would not be of the maximum order. Therefore, after assigning such elementary duties and tasks to the State as defence and maintenance of law and order in the kingdom, they proceeded to prescribe a course of policy for it which made it obligatory on its servants not to interfere in the economic life of the people. In other words, they disapproved of all governmental action which under any circumstances was likely to restrict the judgement and decision of the individual to produce or consume what he desired.

Now, it must be admitted that the classical economists had propounded their theories in good faith, and it is also an undoubted fact that if economic forces, trends and events had been allowed to operate in the manner suggested or imagined by them, the world perhaps would not have become such a sorry place as it actually turned out to be. The blame for subsequent events, therefore, by no chance can be laid at the door of the classical economists. Their fault, if any, could only be said to consist in a defective or incomplete understanding of human nature. This will become more clear as we proceed with an examination of the practical working of the capitalist economy.

How Capitalism Works. It had been assumed, for instance, by the classical economists that when a person decides to invest in production he inevitably gives employment to a number of men and to an amount of materials, the wholesome effects

of which on the total economy of a country become immediately visible. In other words, production of goods by an individual producer means simultaneous production by him of a certain quantity of purchasing power for the sellers of land and raw-materials, for the sellers of power and machines, for the sellers of human labour, and for the sellers of technical skill, managerial organisation and efficiency. Thus the decision of one person to produce goods, with the help of a factory or a mill, automatically causes an increase in the income of a considerable section of the community. And as the number of such producers increases the income of the community also increases. But the number of producers would increase only when production proved profitable. Therefore, one can for this reason conclude that under capitalism profit is the *sine qua non* of production. But none need conclude from this that in capitalistic production losses do not occur. Such a view apparently would be born of ignorance of the actual conditions in which modern industrial production takes place. The emphasis on the profit factor is placed only for the reason that the consideration for it alone can persuade one to produce. What, therefore, is to be underlined is that the motive behind capitalistic production is not of an altruistic nature, i.e. people do not produce with a view to doing good to the society! Such an opinion could hardly be entertained specially when people were seen producing even goods which were only likely to do harm to others, e.g. poison gas or the atom bomb. What one should know is that as long as even injurious production can bring good returns to the producer in terms of economic gains, it would be produced. It is for this reason that one can say that what the producer is mainly and primarily interested in is profit. In fact, this is such an important consideration that even a useful commodity like bread would not be produced in a large quantity if its production is not found to be a profitable proposition.

In the feudal period, on the other hand, people produced these items of personal consumption primarily with the view to meeting personal requirements, irrespective of the fact whether in terms of money it was a profitable activity or not. But under capitalism one does not always produce things required for personal consumption. On the contrary, we find persons, who are well provided for, producing such

commodities as are not at all required to meet their individual or families' needs, e.g. production of iron and steel by Tatas in millions of tons. Obviously these commodities are produced in such large quantities only out of consideration for profits. This in our judgment is the main difference between production in the capitalist period and production in any other period of history.¹

Characteristics of the Capitalist System of Production. The other important characteristic of the capitalist system of production is that, land having ceased to be the most productive source of income, henceforth capital goods, i.e. machinery, factories, mines, mills, banks, railroads, shipping lines, etc. become the chief instruments of production. The capitalists who own such property wield vast economic power, which they use for enhancing private profit. Each entrepreneur who sees an opportunity of earning profit borrows capital, establishes an industrial unit, employs engineers to build, administrators to organise, workers to toil, and hopes to find a market in which he can sell his product for more than what it cost him to produce. Thus, an elaborate mechanism of production, distribution and exchange is set up, with supply and demand determining prices, prices determining profits, and profits determining the allocation of land, labour and capital among various enterprises.

The regulator of the capitalist world is price. Movements of price determine and condition the working of the

*This point is rather controversial in nature. One can, for instance, object to this analysis on the ground that profit motive under capitalism also finally seeks to provide one with the means to satisfy personal wants. In some cases, no doubt, it is true, in fact in small-scale production this is largely true. But one must remember that when we talk of capitalism we do not generally think of small-scale business enterprise. On the contrary, the centre of our attention at this time is on large-scale, mechanised production, made possible by gigantic industrial units, intended to produce fabulous returns. Thus our conclusion in substance is valid. A part of profits thus earned can well be spent on personal needs and requirements. But profits under capitalism, in the main, are earned, in the long run, to earn more profits and more profits, which are finally utilised to exercise power over society and to enjoy the knowledge of having that power.

capitalist system. The function of the price mechanism is to condition both demand and supply. Price movements ration restricted supplies. The whole system works with a certain amount of simplicity, e.g. rising prices discourage consumption and falling prices encourage it. At the same time it works with such efficiency that it restrains demand from outrunning supply in the long period; it functions equally efficiently in the other direction too.

The other function of the price mechanism is to decide what would be produced, how much would be produced and at what point production of that commodity would come to an end. If people want a particular commodity and they are prepared to pay its price, resources would be diverted to this line of production. Like this the price system helps in the allocation of resources. It determines both the choice and avenue of production.

Every system of production has to rely on some method of forecasting. Under the capitalistic system it is price mechanism which does all the necessary forecasting for it. As one knows, the price mechanism functions mainly through the agency of the market. The market is the sole economic regulator. According to market price fluctuations, men are employed or dismissed, factories built or dismantled, wealth produced or destroyed, progress made or retarded. It is claimed that the price mechanism distributes the factors of production in each industry upto the point where the marginal net production is equal to the average rate of remuneration and the marginal cost is equal to price. The result is optimum employment and output, on the one hand, and maximum aggregate satisfaction, on the other.

The Role of Competition. The next characteristic of production under capitalism is that the motive power for its expansion or contraction is provided by the spirit of competition. The competitive spirit is supposed to have swayed human emotion, judgment and action in all ages. In a spirit of competition or emulation man is supposed to have performed some of the most extraordinary feats of endeavour and enterprise. Hence the classical economists, basing

their argument on the sound and efficient working of this predominant impulse in human life, came to the conclusion that, if there was nothing to prevent a person from doing what he desired for furthering his personal well-being, he of his own accord would try to maximise his good by producing wealth. And when one person, as a result of his effort and enterprise, produces a commodity, which enables him to become well-off or prosperous, others would soon be found running after the same reality or mirage of prosperity—it would be transformed into a reality for those who succeed and turn out to be a mirage for others whose efforts are not crowned with success.

To illustrate our argument let us take an example. Suppose *A*, as a result of his tentative calculations, comes to the conclusion that he should invest his personal or borrowed money in the production of sugar and, after he has produced it, succeeds in selling it at a price which leaves him a margin of profit. Soon there would be *B* too in the field, pursuing the same course of action. In case both *A* and *B* succeed then as a result of their efforts a large number of people would get employment in the sugar industry, either as workers, technicians, mechanics, managers, or as organisers. Also an amount of land, raw materials, machines, power, capital, etc. would get employment in the process of such production.

What would be the effect of all this on the income of the community to which *A* and *B* belong? Obviously the sellers of these commodities, human as well as material, would have additional purchasing power, which they could not have got when sugar production had not been started. This additional income in the hands of the community would be transformed into effective demand for the sugar which has been produced through the initiative of *A* and *B*. Therefore when this sugar is offered for sale in the market it would readily command price, also yielding a margin of profit both to *A* and *B*. And thus the spirit of enterprise and competition shown by *A* and *B* would be crowned with success.

Since sugar production proved a paying proposition, the number of such producers would increase (the spirit of compe-

tion helping and accelerating the process) till a stage was reached when, on account of continuous fall in the price of sugar, the margin of profit would become either very small or nil. It would happen like this. As more and more producers enter into competition with one another in producing larger and larger quantities of sugar, the total supply of sugar would increase and with every increase in supply, according to the laws of supply and demand, its price would constantly fall. It should be apparent that only when the price of sugar goes on systematically falling that larger and larger sections of consumers would be able to purchase it. Thus, when in a spirit of competition each producer tries to produce as large a quantity of sugar as he can, with increase in total output, he must agree to reduce his price, if he wants that his produce should sell in the market in preference to that of others. But when one producer reduces his price other producers must necessarily reduce their respective prices, for according to the definition of a perfect market there cannot prevail two prices in the same market, at the same time, and of the same commodity.

Falling Prices and Declining Profits. Thus it would be seen that the spirit of competition, apart from producing other results, progressively reduces the margin of profit for the producers. Producers finding themselves in such a helpless position, naturally, try to avert this reduction in profit, and, in order to succeed in this, they take resort to every measure which can help them to keep the margin of profit at least constant, if it cannot actually be increased.

The best method of averting such a precipitate fall in profit obviously would be to increase the price of the commodity, or at least prevent it from falling. But under competition this is not possible, for when price is determined by the laws of supply and demand an individual producer cannot control the price of a commodity. So the next course open to him would be reduction in the cost of production. This every producer can do in some measure or other. But here, again, difficulty arises due to the desire of the competing producers to produce larger and larger outputs. Naturally, when producers are competing among themselves to produce increasing quantities, they would be compelled by the sellers of labour, raw materials, power resources and other items required in

production to make increasing payments to them, if the latter are to be persuaded to sell their goods and services to the former.

One can now understand why the classical economists had believed that competition would not only benefit the capitalist but it would also benefit other classes of people, who would be taking part in production or happen to be related to it. It was, in fact, mainly for this reason that they had imagined that, with increasing production and employment, workers would receive more and more wages. And it was this optimistic approach to production and society which had led them to believe that the impulse of competition would compel the producers to distribute larger shares to other agents of production, which alone would encourage the latter to supply their commodities in increasing quantities. All this would result in increased income for the community, which alone would assure the sale of the goods currently produced.

In this manner, one line of industry would be fully developed, leaving finally little or no margin of profit for other investors to enter this line. Then the same story would be repeated in another line of production, till that one was also fully developed, producing almost identical results for producers, workers, sellers of raw materials and other members of the community associated with production. After this, still another line of production would be opened, where also, in the long run, the impulse of competition would produce the same results. This process, in fact, would continue until the total economy of a country was fully developed, bringing all-round prosperity, well-being and happiness to mankind. The sum total result for the community would be maximum social welfare 'the greatest good of the greatest number', the ideal also promised by the political thinkers of that time.

When the dazzling prospect of such an excellent future was held out before humanity, who would have refused to heed the words of the classical economists? Who would have not agreed to give them at least a chance of substantiating their promise? It is also true that in the beginning the broad outline of things was turning out to be exactly as had been

predicted. Capitalist enterprise, in its initial stages, was no doubt associated with certain amount of dislocation and misery. But it was readily diagnosed to be an evil associated with every major change in the form and method of production. Nearly all seemed to agree that in a period of such change certain amount of misery and suffering was inevitable, and that in the long run man would gain from such an involuntary sacrifice. So the protests of the dissatisfied and the disgruntled were silenced, and those who tried to be unduly eloquent in their indictment of the new age were disregarded.

CHAPTER LXI

CRISIS IN CAPITALISM

How Things Went Wrong. Although the prophecies of the classical economists turned out to be largely true, yet they did not prove completely true. Trouble first arose on the side of the workers. It had been hoped, one may recall, that with increased production workers' share in national income would increase, which would inevitably bring about all-round improvement in their economic and social conditions. As a matter of fact, while advocating the repeal of governmental regulations, which sought to regulate workers' employment and fixation of wages, the classical economists had assured automatic improvement in these spheres, only if the new economic forces were allowed free play. For they had hoped that when producers compete among themselves to employ increasing number of workers, they would be compelled to meet the demands of the latter, which would inevitably cause reduction in the hours of work per day and bring about an increase in daily wages.

But in actual experience it was soon found that the condition of the workers was worsening almost in every respect. In fact, at times and on places, they were required to work fifteen to sixteen hours per day and were made to live in the most unhygienic and insanitary conditions. Their wages were too small to guarantee them even reasonable livelihood. There was deterioration in other respects too; and gradually their problem was assuming alarming proportions. And thus one of the major assumptions of the classical economists broke down so completely in practice. Now we have to examine the circumstances of this serious breakdown.

Advance in production on capitalistic lines was associated with two social trends, which had not been clearly foreseen. Firstly, it was discovered that, when the pace of industrialisation quickened, increasing number of people were migrating from the rural areas to the urban centres. Secondly, industrial development of a country was invariably accompanied with increase in its population. The result of this two-fold develop-

ment was that the supply of labour was generally more than the demand for it. This irresistibly led to a general depression in the labour market. As the industrialists were primarily interested in maximising their return on capital, they tried to take full advantage of this situation. Consequently, workers found themselves in a very unenviable position. Not only were they not paid what could be called a living wage, but they were also made to work excessively long hours in the most unsatisfactory conditions. Thus opened a phase of most remorseless exploitation of the working classes, who finding the current of the time against them took resort to one preventive measure after another.

But, as ill-luck would have it, each such device adopted by the workers only further worsened their condition. For example, when they found that their daily earnings were insufficient for maintaining their families, they sent their women folk to work in the factories. Obviously their line of approach was that, apart from what the male members of the family earned, if the women also worked and earned something, they would bring additional income to the family. Now, when the logic of the workers themselves was such, there could hardly be anything surprising if female workers were offered lesser wages in the labour market than what men would have been prepared to work on. This development in the labour market only strengthened the hands of the industrialists. With increase in the supply of labour and with the presence in the labour market of a class of workers who were willing to work of their own accord on lesser wages than men could agree to, the general wage level further went down. Thus, the female workers, who had gone to work in the factories to augment the family's daily earnings, only succeeded in reducing the wages of the male workers in the long run.

When this device failed to produce the desired result, the other thing that the workers possibly could do was to send their children also to work in the mills and factories. But with the coming of the children in the labour market, the situation for the workers deteriorated further. As these children could not expect to get as much wages as the adults were being paid, they agreed to work on a wage which was even lower than what the female workers were getting. The

producer always calculated in terms of costs. It was obvious to him that a woman could never work as hard and as long as a male worker could, and it was clearer still that a child could work even less than his mother. Thus wage rates sloped down gradually from adults to juveniles.

All this only helped to aggravate the nature and magnitude of the social malady. The capitalist, being primarily interested in keeping down the costs, forced women and children to work as hard and as long as he could make them work. Thus misery multiplied, health declined, the resistance of the body to illness and mortality diminished, which all culminated in high death rates. While all these man-made problems were there, nature made its own token contribution—while death-rate was rising birth-rate also in this class of people showed signs of alarming increase. One could hardly at that timesay whether it was the law of natural compensation working or it was the answer of Providence to the greed and cupidity of man. From a study of the prevailing situation the sombre conclusions at which Malthus arrived are known to all. We may not agree with those conclusions, is another matter.

Workers Organise. We have said before that the latter half of the eighteenth century, politically speaking, was a revolutionary period. With the coming of the nineteenth century, however, the political approach to the problems of life and society, far from losing force, became only more intensified. So when the British workers found themselves in such a sorry state, they set about the task of organising themselves on a class basis. Thus the idea of forming trade unions was born and, soon after, throughout the industrial parts of Great Britain trade unions were formed in quick succession and in the midst of great enthusiasm. The main object of these trade unions was to bring about an improvement in the working and living conditions of the workers through organised, collective action. They repeatedly appealed to the State authority to intervene and redress their grievances. But the Government of that time found it difficult to reverse the policy which it had revised only a few decades earlier. Consequently, when the trade union leaders found the Governments apathetic towards the workers' demands, they called upon the workers to go on strike with a view to compelling their masters to accept

their demands. Sometimes these strikes were successful and, on other occasions, they failed miserably. But in the course of time and with accumulating experience these trade union organisations became stronger and their combined pressure on the industrialists increased, in spite of the sympathy and weight of the government being, for all practical purposes, more on the side of the industrialists than of the labourers. Employers did all that they could to curb the turbulent spirit of the workers and proceeded to break their organisation and smash their militant strike actions. But against all such difficulties the trade union organisation continued to make headway.

This unrest and strife, however, could not be allowed to continue for long. Slowly and gradually Great Britain was drifting more and more towards a democratic form of government. Parliamentary democracy necessarily meant respect for the point of view of the common man. So the British Government gradually proceeded to redress the grievances of the industrial masses. Each legislative measure passed to protect their interests, however, encouraged the working classes to press for a greater safeguarding of their interests. In this way Acts after Acts were passed by the House of Commons to compel the industrialists to meet the point of view of the workers. Industrialists generally opposed such legislation. Their argument was that each concession they had to grant to workers on the behest of the government meant further increase in the costs of production. Consequently they spared no efforts to oppose the government's desire to protect the workers and to resist the demands of the workers generally. But the swing of time was now in favour of the underdog and, therefore, the employers' efforts to the contrary proved of little avail. At the most they could succeed only in slowing the pace of labour legislation.

The Deadlock. What was capital's answer to this challenge? The answer, in fact, was provided by the peculiar nature of the capitalist production itself. With every advance in industrial production more, better and cheaper machines were being produced. Increasing use of these machines, apart from producing more and cheaper goods, also reduced the number of workers employed in industrial establishments.

Therefore, particularly for this reason, industrialists found it, in the long run, more economical to have these highly expensive machines rather than to employ large number of workers, whose daily increasing wage demands were regarded an intolerable burden on the industries. Thus, as these machines proved to be labour saving devices, they could be conveniently used as an effective weapon to break the resistance of the workers' trade unions.

The second prong of the capitalist attack was provided by the agency of monopoly. Industrialists from their experience had learnt that unlimited competition only undermined their own relative position, individually as well as collectively. The more the producers competed among themselves the more they weakened their own position. Therefore, capitalists as a class came to realise that it would be infinitely better to combine than to compete, for such combinations not only strengthened their hands in dealing with the workers but also helped them to reduce the costs of production. Without combinations, it was realised, substantial internal and external economies, associated with large-scale production, were not possible; neither any great gains from increasing returns could be had. With combinations such possibilities increased tremendously. Thus the second most important assumption of the classical economists was thrown to the winds. Instead of there being universal competition, now there were in the field two gigantic monopolies, face to face with each other—one of the capitalists and the other of the workers.

But, in spite of all that had happened in favour of the workers, either through the efforts of the government or as a result of their own organisation, their position remained generally weak and unsatisfactory. While money wages were slowly rising from decade to decade, there was little improvement in real wages. Owing to several factors the cost of living was gradually going up, which made improvement in real wages nearly impossible. Therefore the supply of essential goods and services to the workers, which alone could guarantee comparative well-being or free a person from the day-to-day worry of scarcities, remained for all practical purposes as unsatisfactory as before. Consequently the struggle

between labour and capital remained; in fact, with the march of time the gulf between the two became more and more widened. While the average productivity of labour was increasing at a rapid rate, as caused by increasing application of machine in the processes of production, wages did not increase at a corresponding rate. Under these circumstances gap between current production and current consumption became inevitable. In other words, while the producing capacity of the industrial masses was increasing by leaps and bounds, their consuming power was not increasing at the same rate.

Thus all the goods produced were not being currently sold. Partial over-production side by side with partial under-consumption were proceeding apace simultaneously. While people were not getting all the things that they needed, all the goods produced from year to year were not being sold. In other words, while majority of the population in a country or in the world remained under-fed, under-clothed and ill-provided in respect of their goods and services, producers were running unsold stocks. One can understand the truth of this statement easily if one would recall that in an industrially advanced country the wage earner, compose the main body of consumers. However, when such accumulated stocks became formidable in quantity, prices started falling, resulting in losses and consequent curtailment of production. In such conditions unemployment of men and materials increased, when poverty, misery and suffering of all sorts multiplied almost at a geometrical progression. When such crises in production occurred in the beginning, people thought that perhaps they were caused by some inexplicable circumstances, which would disappear when the sun of capitalism had taken its proper position in the industrial firmament and its light shown more brilliantly. Moreover, as after each crisis things improved at a rapid pace and they not only returned to the original normalcy but, in fact, registered a higher rate of production and consumption than had ever been seen before, experts were satisfied with the magic working of the capitalist economy. But, later, when it was discovered that such crises occurred at more or less regular intervals of seven to eleven years, these experts naturally felt rather intrigued about the situation.

Boom and Slump. It would appear that difficulties arose fundamentally from two factors, i.e. when the multiplying demands of the working classes began to deprive the producers of increasing slices from their profits, they took resort mainly to two measures to avert this tendency. Firstly, with a view to browbeating the workers, they showed marked inclination to displace men in production by machines; secondly, in order to arrest the disaster caused by unlimited competition in their own ranks, they seemed to prefer combination to suicidal competition. The result of the first device was unemployment of men. And when unemployment became rampant workers were willing to work on lower wages than they would have otherwise agreed to. The result of the other device, i.e., discarding competition in favour of monopolistic forms of industrial organisation, was that while it placed the producers in a better and stronger position to deal with the menace of the working class, it also enabled them to reap greater benefits from rationalised, large-scale production. Obviously when there was understanding and agreement among producers, workers could not take advantage of the competitive impulse of the former to drive bargains favourable to themselves. The off-shoot of both the situations was that the trial of strength, in the advanced stages of capitalism, between capital and labour became even more intensified.

Combination among producers along monopolistic lines helps them to command large financial resources. With such vastly increased resources expensive labour-saving machines are ordered for. When the demand for capital goods increases, there comes to prevail great prosperity in the capital goods producing industries. And when the margin of profit is found to be larger in the capital goods producing industries, larger investments are attracted towards them, resulting sometimes in their disproportionate expansion and unbalanced development. Ordinarily there should be nothing wrong in such a tendency, for the growth of this class of industries should, in the long run, only help to give more employment to men and materials in a country.

But there are some peculiar characteristics of the industries producing capital goods which cause all the complications. Production in these industries happens to be rather 'round-

about' in character. As the production of machines takes long time, market conditions in such industries cannot be directly related to the demand for them; neither this 'indirect' production is related to the actual conditions obtaining in the business world. In marked contrast to this, conditions in the industries producing consumer goods are directly related to the demand from the public for such goods; the relation being of a direct nature, expansion in them can only take place when there is increased demand for the goods produced by them. Similarly, when there is contraction in the demand for such goods, one can easily imagine contraction in the production of such goods. On the other hand, in the capital goods industries, as the demand for capital goods is a derived demand from the demand for consumer goods, production of capital goods cannot be immediately or directly related to the demand for consumer goods. In other words, production of capital goods is not directly related to the market condition obtaining in the business world.

To illustrate our argument let us take a practical example. Suppose the demand for consumer goods is showing signs of increase. As a result of such increase production of consumer goods would be increased. And when these industries begin to produce larger bulk of goods and these goods are sold with a profitable margin the owners of such industries would be inclined to order for more machines to be used in the running of such industries. Proprietors of capital goods, seeing larger demand for their output, would either start producing more capital goods or, if the demand is very great, would set about planning expansion of their industries by starting new ones in order to produce more capital goods in the years to come. But all this naturally takes time, and consequently sometimes it so happens that by the time larger number of machines and plants are produced, the demand for the same in the mean time has been reduced. Such a situation in the real world is not only possible but, in certain circumstances, inevitable.

For example, there is at present large demand for capital goods, plants, machines, etc. all the over world. U. S. A happens to be the only fortunate country which can largely meet such a world demand. Therefore, in order to meet

this increased demand for machines and plants, American producers, for instance, at present are doing two things. They are either trying to produce as many machines as their present producing capacity can allow them to produce or planning the setting up of fresh capital goods industries with a view to producing more machines and plants in the years to come. Both these processes, however, will take time. So it is quite possible that U. S. A. may not be in a position to meet the total world demand for machines before the year 1956.

Now, the danger is that when American producers have invested billions and billions of dollars in the production of these goods and in the expansion of such industries, it is revealed that, on account of the demand for consumer goods having in the meantime declined for various reasons, industrialists all over the world are not in a mood to purchase as many machines as they had hoped to buy originally. When this comes to be known great nervousness and consequent panic would prevail in the capital goods industries. At such a time prices of their shares and securities would decline. This would only further intensify the panic. Holders of such shares and securities would start disposing of them in a hurry and excitement. Thus capital would be withdrawn from these industries, leading to the closing down of many of them. It may be noted that it is this peculiar feature of the capital goods industries which is responsible for most of the world's misfortunes in modern times.

When such a situation develops, usually it takes long time to effect corrections in these industries. In the meanwhile stagnation sets in. Slump conditions come to prevail, causing reduction in the employment of plant, men and materials, which depress both wages and prices. At a time like this the Stock Exchange loses confidence and credits are called in. The financial crisis, starting from the Stock Exchange, spreads to all the industries producing means of production. The collapse or closing down of the capital goods industries causes further unemployment in the labour market which, through lowered demand, spreads in an aggravated form to the consumer goods industries. This causes unemployment on an increasingly wider scale. In the meantime full-

scale slump sets in, when every department of production is affected adversely, leading to a full-fledged economic depression.

Let us now analyse booms and slumps in their proper sequence. In a phase of recovery producers generally are optimistic. Seeing the prospect of high profits, they are inclined to expand their individual scales of production. More production means more employment of men, materials and machines. More employment of these factors leads to greater disbursement of purchasing power to the community. With greater purchasing power in their hands, consumers go to the market to purchase all kinds of consumer goods. Thus, when the demand for consumer goods is high, prices rise. And when prices rise, profits also rise. So in the expectation of continued rise in prices and in anticipation of high rates of profits, producers expand their scales of production still further. But production can increase further only when producers are prepared to pay higher remuneration to workers, technicians, managers, organisers, to the suppliers of raw materials, machines and power as well as to the suppliers of credit, i.e. bankers. For the time being, as the producers are generally in an optimistic frame of mind, they do not mind increased payments to the various agents of production and, in fact, they pay whatever is demanded of them. Thus we find that more production takes place only at a higher cost of production.

When costs of production increase, they must be invariably reflected in rising prices. Rising prices usually insure larger profit margin. Therefore, in expectation of profit, production increases still further. But now agents supplying factors of production would demand still higher remuneration and prices for their services and goods needed in production. This situation, however, cannot be allowed to prevail indefinitely. In view of costs of production increasing rapidly producers would be less inclined to pay higher prices for the goods and services which they consume in the productive process. As the wage-bill generally happens to be the largest single item in the costs of production in most industries, at this stage a trial of strength would start between capitalists and workers. Partly the demands of the workers would be

met, but partly they would be by-passed by the capitalists by ordering more expensive machines which, in effect, reduce the wage-bill that producers otherwise would have paid to workers. But, in spite of all efforts to the contrary, costs of production go on rising, prices following the lead given by rising costs. Thus, on account of rising prices, the workers' cost of living also goes on rising. In order to cover this increased cost of living, they become even more insistent for increased wages. But at this stage all the efforts and energies of the capitalists are directed to 'rationalising' and decreasing costs of production, mainly by reducing man power and its share in production.

While all this is happening capital goods producing industries are making good profits. Consequently more and more people invest their capital in such industries. At such a time prices of the shares and securities of the capital goods industries rise unduly. Capital goods industries thus go on expanding without showing much appreciation of the conditions obtaining in the real world. But, as we have seen, working classes generally, on account of increasing use of machines in production and monopolistic tendencies on the part of the producers, do not in times like these get as much wages as they should. In fact, money wages are not only not equal to the increased cost of living but they actually lag behind the marginal productivity of labour. In other words, workers do not get the equivalent of the value that they produce. The result is that while production is still increasing at a tremendous pace, the consuming capacity of the community ceases to increase in the same proportion or at the same rate.

The other significant tendency noticeable among producers at this time is that they try to produce as much as is physically possible for them. One of the major defects of the capitalist system is that production under it takes place without producers knowing exactly the possible volume of demand for such things from the consumers. The other defect is that each producer seeks to increase his volume of production without disclosing to other producers his scale of expanded production. So every producer is, for all practical purposes, in the dark about the increase in the scale of

production of the other producer. Therefore sometimes the total quantity thus produced is less than the total demand for it, at other times it is just equal to it or even more than the total demand. When the last situation arises it is a case of over-production in relation to current demand.

Economic Depression. Trouble at such a time usually starts in the following manner. As costs of production rise, prices also rise. With rising prices, goods currently produced are not sold. Thus from year to year producers and wholesalers carry forward accumulated stocks of goods. With the accumulation of unsold goods prices show downward trend. But when the danger of falling prices faces the producers, they generally become cautious. Banks at this time are inclined to put stringent conditions on advancing credit. Rates of interest soar high. At this stage conditions become practically stationary in the business world—there is neither expansion nor contraction for the time being. But under capitalism a stationary situation, for all practical purposes, is as dangerous as a declining one. Usually capitalist economy is either expanding or contracting; it seldom remains stationary. In fact a stationary condition is often the harbinger of evil. Such is the dynamics of the capitalist system of production. It cannot be easily explained with the help of logic or reason. But this is what usually happens. As each system of production has its own laws of movement, capitalism reveals this peculiar dynamics.

However, as soon as the stationary position is reached there is complete stagnation in the sphere of production. As we have mentioned before, at a time like this trouble starts mainly from the capital goods industries, which being unduly developed, are always affected first. There is a sharp fall in the prices of their shares and securities. Adverse developments in this class of industries lead to a reduction in the aggregate income of the community. With diminution in total income there would naturally be a fall in the demand for consumer goods. And when there is such a fall in demand, prices go down generally, causing decline also in the consumer goods industries. When consumer goods industries are hard hit, they cancel orders for capital goods, which causes further

decline in the industries producing capital goods. Investors in a state of panic begin to withdraw their capital from these industries. Now the car of capitalism is in the reverse gear. Disastrous developments take place in quick succession and almost at a sensational pace. The effort and enterprise of years is ruined in no time. Unemployment becomes a universal experience, which causes poverty and pestilence. Industries are closed down. Raw materials and power resources remain unsold. Thus there is an all-round depression, affecting not only one country but, one after another, all the countries of the world. As in the modern period of history different parts of the world are inter-linked and inter-dependent in one sense or another, if there is prosperity in one part of the world, it invariably spreads to other parts. If, on the other hand, there is depression in one part, it irresistibly spreads to other parts. Such is the nature of the economy of the present-day world.

With the onset of the depression, along with its financial and other repercussions, affecting the national and international economy at large and with widespread economic misery and social distress, the critical juncture is reached. From this nadir the decline leads to improvement, and now dynamic movement in the right gear. The same process is repeated, which again culminates in a crisis. Thus, it would be seen that, between one crisis and another, industry passes through a certain circle or as, it is called, cycle. It is for this reason that the whole phenomenon is known as trade cycle.

Symptoms of Permanent Depression. It has been noticed, of late, that with advance in industrial production economic depressions are becoming more and more severe in their impact. The result is that usually it takes a long time to clear the debris of devastation and misery caused by a depression. Moreover, since the nature of the world economy is becoming more and more industrial, economic depressions show pronounced tendency of affecting larger and larger regions of the world. Furthermore, the more industrially advanced a country is the more hard hit it is by the violent impact of a depression. Consequently, in the present century the economy of the United States was affected first,

and also most, by the violence of a depression. And what is even more alarming that, of late, a sort of permanent depression is becoming inseparably associated with the capitalist economy. While in the old days unemployment increased and available resources could not be fully utilised only in a state of depression, it is now being noticed that even when the boom is touching the peak point there is considerable unemployment of men and materials. In other words, depression is becoming endemic in the capitalist system. This is undoubtedly a disturbing sign from which some authorities have drawn the conclusion that capitalism in its advanced stage would show increasing signs of failure to utilise currently available resources in production.

It was from such a belief that an economist of the eminence of Lord Keynes arrived at the conclusion that as capitalist production advances on its course, net investment on private account would show increasing tendency of lagging behind that ideal quantity of investment which would be needed to bring about conditions of full employment of men and materials in a society. That ideal investment is described as optimum investment. Apparently this view does not seem as serious as it really should. The conclusion which ought to be drawn from such premises is that the gap between real and optimum investment being an ever widening one it should be progressively filled by investment on State account i. e. by spending increasing amounts on such projects as public works, development of social service, etc.

This is exactly what Keynes advocated in the course of his writings. He emphasised that State expenditure from year to year should expand in order to fill the gap between actual and optimum investment, and thus help to maintain full employment of men and resources in a country. For, according to contemporary economists, the highest economic ideal at which a modern, progressive government should aim at is the maintenance of full employment in a country. One can imagine what a serious departure is this from the original stand of the classical economists, who had advocated non-intervention by the State in the economic life of the people.

This is, however, only one of the remedies which is suggested

as the cure of the crisis in capitalism. As we are not discussing remedies and solutions of the problem here, we may proceed after emphasising the fact that even when boom conditions are obtaining the situation by no means is satisfactory. For instance, among other things that happen in a boom, the tendency on the part of the producers (in order to avert the fall in prices and profits, in view of increasing supply of consumer goods, without there being corresponding increase in demand for them) to change the nature of production is most serious. When producers are faced with the awkward possibility of falling prices, they try to divert their investments more and more towards the development of 'secondary' and 'tertiary' industries, which are devoted to the production of all kinds of luxury goods, armaments, harmful commodities and drugs, like opium, cocaine, heroin, to name only a few. As there is great inequality of income in the society, even such superfluous, useless and harmful commodities are produced and fetch good prices, when the majority of the people do not have even two square meals. For the time being no doubt the problem of capitalism is solved, and the precipitate fall in prices is prevented. But, as we have seen, this problem is solved only for a short while, for the evil day cannot be postponed for long, much less for ever. Ultimately when it is discovered that even such goods have been produced in larger quantity than could be sold at reasonable prices, conditions of slump come to prevail. But, even apart from slump, crisis and depression, the question is : how far economically, ethically or morally production of such superfluous or harmful goods can be justified when the majority of people in the world remain hungry or underfed ?

The Need for Change. There are several theories propounded by professional economists and others which seek to explain the various phases of capitalist production. It would be hardly necessary to examine them here, for they form part of economic theory meant for the study of advanced students of the subject. For our purposes this elementary description of the phenomena of the trade cycle would suffice for realising the necessity of changing the system for something better. It must have appeared a strange and serious matter, indeed, that such cataclysmic changes of this nature should take place in our system

now and then without any rhyme or reason. What is still worse, crises and depressions sharpen class contradictions and aggravate the unenviable condition of the workers. Such a situation compels the working classes, who formerly tended to be at peace with capitalism, to become active in the struggle against it. We can support this by the experience during the economic depression of 1929-32, which clearly demonstrated what a dangerous event is an economic depression in the lives of nations. The colossal price which it demands in terms of suffering, extreme poverty, wide-spread pestilence and unbearable trial of the human soul is simply incalculable. That it also becomes the strongest single argument in favour of world wars is another aspect of the matter to which we shall address ourselves in the following chapter.

SOCIALISM

Promises Not Fulfilled. The advocates and exponents of the capitalist system had held out the promise of a form of industrial production that would create a millennium in which by practising the principles of competitive, private enterprise not only the people of one country would become happy and prosperous but the whole world would be enabled to participate in that feast of well-being and progress, more or less on an equal basis. They had also predicted universal harmony and peace, in the salubrious climate of which each part of the world would develop economically, without giving cause to friction or conflict between the interests of one country and another. But what was the world's actual experience?

Even in the industrially advanced countries prosperity and happiness had not become a common experience, nor was plenty shared equally by all wherever it existed. In fact, while one class of people had become rich out of all proportion, the vast multitude was left to live the life of want and insecurity. The economic development of the world, instead of following any easy or smooth course, had come to a standstill in many parts due to the attitude of the adventurous and ambitious nations, which sought to perpetuate the economic backwardness of the less developed countries in order to be able to sell to them their own manufactured goods.

Further, it had been assumed that the principle of *laissez faire* would be equally applicable in the sphere of international trade, and if the latter was allowed to take its own course, unregulated and unrestricted by any external authority, it would confer benefits on undeveloped countries as much as on the developed ones. But in reality, specially after the emergence of such ambitious competitors in the field as Germany, U. S. A. and Japan, international trade ceased to be conducted on the principles of free trade. In fact, foreign trade came to be increasingly backed, boosted and bolstered up with duties, tariffs and quotas, adopted by the governments of the

countries which were in a hurry to take lead in the competitive race of international economy.

Thus, combined world economic development on any fair and equal basis became an impossibility. The industrially advanced nations had managed to gain political foothold in the backward parts of the world, where they tried to establish exclusive rights of selling manufactured goods as well as of investing surplus finance capital by deliberately thwarting and crippling their economies.

Similar privileges were claimed by other countries which entered the fray a little later. This led to a trial of strength among the industrially advanced nations, on the one hand, and between these and the backward areas of the world, on the other, on the issue of colonial exploitation. These developments made the dreams of world peace and progress impossible. As a matter of fact, with the march of time, friction and conflict between the rival capitalist nations only increased further, which compelled them to adopt openly imperialistic roles in world politics.

When matters had become so complicated and the dream of universal well-being, prosperity and peace had disappeared in the thin air, attempts by the students of the subject began to be made to analyse the nature of the malady, with a view to restoring reason and sanity in the economic affairs of the world. Explanations followed explanations in quick succession. But none could suggest such a remedy as could prevent the recurrence of the evil or even explain the nature of the trouble.

The Birth of the Socialist idea. The apparent shortcomings and glaring inequities of the industrial system encouraged its critics generally to become louder and more vigorous in their criticism and condemnation of the economic and social results of capitalism. Capitalism, it would be remembered, had its critics from the earliest phase of its rise and growth—in fact, even before capitalism had come into vogue, there had existed strands of socialist and communist thoughts. But as long as capitalistic enterprise was able to dazzle the imagination of mankind by its promise of universal

prosperity, freedom, equality, justice, rationality and 'the greatest happiness of the greatest number,' its critics could hardly feel sure of their own ground or create much impression on others.

But since capitalism had now produced its own nemesis, in the form of booms and slumps, crisis and depression, unemployment and poverty, international friction and war, the voice of its critics became more strident and their logic more convincing. They offered all manner of explanations and suggested a variety of remedies. While some adopted a constructive approach, basing their case on reform and education, others seemed to run amuck under the intoxication of their own irrational approach. For example, first came those romantic reactionaries who advocated the breaking of machines as a remedy of all the ills which had been created by capitalism, and pleaded for a return to the past. But, naturally, such insanity could not prevail for long, much less succeed in its purpose. Then came those who began to dream of a heaven which could be created on this earth only if men decided to co-operate, instead of competing among themselves. Robert Owen, the chief exponent of this idea, went to the extent of establishing one such ideal society, where by the elimination of disorderly competition and faulty education, mankind was intended to be won back to the path of progress and peace, through a reassertion of the religious, moral, cultural and ethical values. But to the practical and realistic imagination of the people of that time this innocent and pious panacea did not appear to solve the colossal problem that was capitalism with all its good and evil manifestations.

Others advocated still other views and policies. But almost all of them happened to lay emphasis on the organisation of workers on trade union lines, which was supposed to compel the employers to yield all that their employees wanted. As a result of this emphasis trade unions were formed in Great Britain as well as in the European countries. But the organisation of workers on trade union lines only further intensified the struggle between labour and capital instead of resolving it. In answer to worker's organisation, industrialists combined to beat the former at their own game. So the conflict and ensuing struggle between the two assumed

serious and alarming proportions. At this stage another view seemed to gain popularity, - one which attributed all economic and social ills to the idea and institution of private property. Proudhon, the French thinker, shouted: "Property is theft; property owners are thieves." His argument was that if somehow property could be abolished everything would be well with the economic world.

But the critics of the capitalist system were still as much in doubt about the real nature of the capitalist evil as its advocates and exponents were mystified and bewildered by its intractable ways. In view of this everybody seemed to be groping in the dark, without finding the end of the blind alley. The idealists and the Utopians failed in suggesting a way out of the great impasse; while revolutionaries only realised the futility of their radical doctrines.

All those who criticised and condemned the capitalist system were generally known as socialists and all their theories were put under one head: Socialism. They all sought to reform, reject or replace capitalism by suggesting schemes of radical social reform and equitable distribution. But nearly all of them failed to suggest anything of a practical nature, which could achieve the desired end. And even those who did succeed in suggesting an alternative failed to mention or devise the agency which could abolish capitalism and replace it by a more humane system. Being idealistic in their approach, the schemes they suggested turned out to be unpractical Utopias. All of them thundered against the criminality of a system which enabled a class of idle rich to prosper by exploiting the honest labour of others, but none succeeded in giving the outlines of a system which could take its place. It was only Karl Marx's comprehensive and synthetic genius which ultimately gave a more or less scientific explanation of the defects and wrongs of the industrial phenomena and also indicated the agency through the efforts and initiative of which capitalism could be overthrown and Socialism enthroned in its place. Believers in such a point of view are also known as socialists.

The Socialist Thesis. There are, however, socialists and socialists, and it is next to impossible to define a socialist.

Apart from socialists as such, there are Anarchists, Syndicalists, Fabians, Guild Socialists, State Socialists, Communists and others, all of whom take their stand on varying programmes which, scientifically speaking, can scarcely be separated from the fundamental principles of Socialism as they are understood today. Then there are also many derived academic theories which, while mainly emphasising the economic approach and explanation, take inspiration from and come very near to the socialist doctrine.* In view of these varied, divergent and, in certain respects, conflicting viewpoints it would be difficult to define Socialism in a manner as to make it acceptable to all these schools of thought. For example, George Bernard Shaw, himself a socialist, defines Socialism as "the complete discarding of the institution of private property...and the division of the resultant public income equally and indiscriminately among the entire population," a description which would not apply to the social order advocated by many socialists. Hence, instead of attempting a generally acceptable definition of Socialism, it would be better for our purposes if we elucidated its basic principles, defined its objectives, and indicated the means of achieving it.

Socialists seek to explain all the evils associated with modern industrial society in terms of the innate and inherent defects of the capitalist system of production. For instance, they trace the source of all trouble in the industrialists' competitive greed for profit and draw the conclusion that so long as production was based on such a narrow and irrational consideration universal plenty and general well-being could never be achieved. They argue that as after a stage it pays a capitalist more to produce less (for rising production causes a fall both in prices and profits), the greed for profit would always serve as a brake on production. So, in their view, in order to ensure plenty and prosperity for all it is necessary

*Even apart from these views which are socialistic in origin and inspiration, there are some political cults which claim to be socialist in form and content yet are not socialist in substance and reality. National Socialism of Hitler's Germany would serve as a good illustration. National Socialism, no doubt, included in its programme some such features as closely resemble Socialism, but it would be a mistake to consider Nazism under Socialism, for, if anything, National Socialism was a reaction against Socialism.

for the profit motive to cease to be the main criterion and motive of production.

But when profit is abolished no industrialist would like to produce, for under capitalism goods are not produced for altruistic reasons. Accordingly, socialists say that, instead of private individuals being allowed to remain the owners and controllers of production, all factors and means of production should be owned by the State, which should produce goods not for profit but for consumption by the community.* In other words, when State comes to produce goods, naturally, that quantity would be produced which is needed by the people at large, irrespective of the fact whether it yielded profit or not. And if in a particular line of production loss was incurred, it would be made good in other lines of production. If, on the other hand, there was profit in such production, this surplus would be added to the general revenue of the State, which would be spent on the common welfare of the people.

With the disappearance of profit as an impelling force in production competition would automatically cease to exist, at least in the shape in which we find it today. And if in the socialist society also there is competition it is of a different sort altogether and has different objectives. There individuals vie with one another in producing more goods with a view to strengthening the hands of the State to provide better defence and such other benefits for the common people. Furthermore, once unhealthy competition as a principle of production is discarded, most of the problems of the working

*We have said before that socialists differ widely in their approach and emphasis. Many hold similar views on this particular issue of the State agency being allowed to play a role in economic life. But the Anarchists hold radically different views. Socialists' attitudes towards the State differ widely. For instance, while State Socialists would establish State ownership and would have the State control future production, co-operative socialists distrust the State and fear the overdevelopment of bureaucracy and would like to base their system upon the organisation of independent producers. Syndicalists, Guild Socialists and Industrial Unionists also hold more or less identical views on this subject. But Anarchists go to the extreme limit of holding the State to be the ultimate source of exploitation and maintain that no reasonable social order can be established so long as it exists.

classes are automatically solved. The labour problem as such arises mainly from the desire of the capitalist to pay to the worker as little as possible. The workers resent this and try to resist by taking resort to all kinds of devices, desirable and undesirable, to earn a reasonable wage. But success in this line usually becomes difficult for the workers because of the spirit of competition in their own ranks undermining their collective discipline and class solidarity. And when the workers try to eliminate this evil of competition from their ranks by forming trade unions, capitalists also combine, and in the ensuing trial of strength it is usually the capitalist class which finds itself favourably placed to carry through its point of view.

All such problems under socialism would be automatically solved. When the State happens to be the chief employer, it would give to the workers what is needed to ensure them adequate wage. In the early stages wages may not be very high. But as the socialist experiment gets into stride and all-round progress is made in that direction, the wages of the working classes would rise rapidly. The socialist State being no private agency, seeking to enrich itself as the capitalist does, whatever the workers produce would, in the long run, accrue to them, either in the shape of higher wages or in the form of other concessions and facilities. Thus exploitation of workers would come to an end.

Similarly, unemployment, strikes and lock-outs and other allied industrial evils would cease to exist. Unemployment, for example, mostly takes place when either the supply of labour is more than the demand for it or when there is deliberate attempt on the part of capitalists to curtail production with a view to preventing the impending fall in prices caused by over-production of goods. Under socialism no such contingency would arise, for the very first article of faith with the socialist authorities would be maintaining full employment. Therefore all those who are willing to work, are physically fit to work and can work on the prevailing rates would be provided with work. There may be unemployment of a temporary nature, caused by a change-over from one line of production to another or as occasioned by similar other short time factors. But in no case can there be any such

thing as long time or permanent unemployment. Similarly, strikes and lockouts would have no place in a socialist order.

The main objective, it may be emphasised again, before such a society would be to employ all men and materials available in the country and with their aid to concentrate primarily on the production of necessities of life so as to provide all a reasonable standard of life. And after all the people have had a substantial measure of these necessities, efforts would be made to produce comforts and luxuries. Thus under socialism there would be ever increasing avenues of employment. And, finally, if a stage is reached when with the aid of highly mechanised forms of production all the good things of life have been produced and still there are some people in need of employment then hours of work would be curtailed. In fact, a measure of curtailment of the average hours of work would be necessary even in the beginning of the socialist experiment. And this reduction in work would become even more pronounced in later stages, for the ideal then would be to provide employment to each and all, even if such employment means work only for an hour or so per day. Certainly such an arrangement would be infinitely better than the present one in which, while a large number of people remain unemployed, others have to work so long and so hard that their health and lives are seriously impaired.

One of the most serious indictments of the capitalist civilisation is that it produces appalling inequality of incomes in its various economic and social groups. As one knows, such glaring inequalities mostly arise from the fact that, while a small number comes to own production, the vast majority are reduced to the status of mere hewers of wood and drawers of water. Socialists are strongly opposed to such gross inequalities; they maintain that when the task of production is taken over by the State the possibility of such inequality would not arise and this problem would be solved without much difficulty.

One may, however, object that the ownership of production is not the only factor which causes inequality of incomes. Unequal salaries and wages also can and do cause a measure

of inequality. Socialists for this reason do not believe in paying grossly unequal salaries or wages to different classes of people. In an ideal socialist society, therefore, people would not be paid according to their work but they would get according to their needs. When such becomes the order of things inequality of incomes would automatically disappear. But socialists do realise the necessity of paying, in the transitional period, different salaries and wages to different classes of workers, for they rightly think that if some such compromise is not accepted as a temporary measure production might be adversely affected in the initial stages of the socialist experiment. As human nature cannot be reformed at one stroke, they accept this as an important compromise with their high principles. But even such inequality, as is likely to be caused by paying unequal salaries, they seek to reduce by adopting progressive taxation as an important principle of public finance.

Smaller Reforms. Besides, there would be scope for smaller economic and social reforms as well. For example, in modern times, when adequate necessities of life have not been produced, superfluous and even harmful goods are produced, for the production of such goods is found to be more paying than the production of necessities. Such a contingency under socialism would not arise. The socialist authority would produce only such goods as are socially necessary and useful. Goods needed for making life comfortable would also be produced, but they would be produced only after the necessities of life have been turned out in adequate quantity. In other words, under socialism first things would come first and most strict adherence to a social and ethical priority would be observed.

At present vast funds are spent and squandered away on advertisements and in organising sale publicity by competitive producers, who want their own goods to sell in preference to rival goods produced by others. Considered from the social angle such expenditure is net waste. When the total supply of goods happens to be less than the total demand for them, there is no wisdom or reason in wasting large resources, financial and other, on organising sale publicity. As in the socialist society there would be no competing producers

the question of wasting such large resources on advertisements would not arise at all. The socialist authority, keeping in view the choice and preferences of the consuming public, would try to produce only such goods as happen to be generally in demand and the consumption of which is not likely to harm the people. Incidentally it may also be mentioned that the modern practice of adulterating commodities and drugs, which has become a habit with unscrupulous producers, can have no place in the socialist scheme of things.

Moreover, as is so well known, in a crisis our industrialists have to destroy a good part of what they have produced, when there is danger of a diastic fall in prices. Thus, while millions of people are hungry and naked, large quantities of socially useful and necessary goods are deliberately and remorselessly destroyed. Similarly, in order to get the best returns from the existing capital investment, industrialists try to suppress scientific inventions on which they have often spent millions. If the invention or discovery in question turns out to be of such a revolutionary nature that in order to accept and introduce it the industrialist concerned has to pull down his entire industrial superstructure then he prefers to keep that scientific formula a sealed secret for a long time or for ever. In consequence of such practice, which is not uncommon, humanity is cheated of its advancing wisdom and prevented from deriving any benefit from such scientific inventions. This is, however, only one aspect of the tragedy. The other aspect is that if a person, who is new to a business, comes across some such invention, as is likely to curtail the cost of production drastically, he would readily adopt it and thus indirectly compel rival producers to write off their entire industrial equipment, if they want to exist in that line of production. Thus industrial equipment worth billions is sometimes wasted in no time because of this competitive factor. Society suffers as a result of both these situations. When, however, the State comes to be directly responsible for production, as would happen in a socialist society, these forms of social and economic waste would be conveniently avoided.

How it will Happen. All this seems too good to be true. One may well ask: who will bring about such a great change and how? In other words, one would like to know

the ways and means which socialists prescribe for bringing about such drastic economic, political and social changes. It would be interesting to know that prescriptions as to the methods whereby socialist ideals are to be realised vary considerably. The methods and means suggested vary with the temper and tone of the particular socialist ideology. Revolutionary socialists particularly believe that the workers being the worst sufferers from the wrongs created by capitalism it is they who should organise to fight the battle for socialism. In other words, they maintain that the establishment of the new society can be achieved only by a violent uprising. They also hold the view that when the proletariat awakens to its historic duty and responsibility no power on earth can prevent it from achieving its objective. The weapon which they prescribe for bringing about this change is the same old weapon of strike. But while thinking of world revolution they naturally have in their mind a militant general strike by international working class rather than isolated actions by local trade unions.

Other schools of socialists, however, hold that when strikes become frequent and general in character capitalists, in the long run, would be compelled to accept more and more the demands put forward by the working classes. Meanwhile, it is believed, the democratic process would be reaching its logical conclusion, when increasing popular pressure on the State would compel it to respect the working class opinions. And when governments come to this view they would not only be compelled to make the industrialists concede the demands of the workers but they would also be led to nationalise one industry after another. Thus, three factors would be operating against the industrialists. First, on account of the increasing pressure exercised by the organised proletariat the margin of profit would be constantly and progressively falling. Second, in consequence of the desire of the democratic State to nationalise industry, capitalism would find the situation further difficult for itself. Third, on account of the natural tendency of the rate of profit to decline, with increase in the total quantity of capital in a country or in the world, capitalism would meet its own nemesis. But while these socialists believe that the logical culmination of all these factors would automatically bring about the abolition of capitalism,

the other school believes in its violent overthrow by organised, militant working class. Communists generally belong to this latter school.

Establishment of a socialist society, however, will not be the end of the story, for socialism is only the means to an end—the end being the maximisation of social welfare. After the capitalist form of production has given place to a socialist one, the machinery of production, distribution and exchange will have to be re-organised in such fashion as to redeem the promises held out by the socialists. The means which they suggest for such a consummation is Economic Planning. In the socialist society the planning authority would take the place of the private producers. The planning authority, reflecting the collective and democratic will of the people, would produce those goods which are most in demand.

Progress And Peace. When such an ideal society has been established, there would hardly be any question of exporting manufactured goods to other countries with a view to exploiting their peoples. As foreign trade would then be carried on through the agency of the State, only such things would be exported as have to be exported in order to make imports possible. There would be no occasion of exporting finance capital, because whatever capital is available in a country would be needed for the development of its own resources. Capitalists usually export such capital elsewhere in their desire to earn a higher margin of profit than they can earn at home. But when capital comes to belong to the State, the planning authority would insist on its investment inside the country. Inter-national trade would then be carried on according to the true principles of comparative costs, and all countries would stand to gain from such trade. And when foreign trade is regulated and carried on on such rational lines, chances of international conflict, at least on economic grounds, would be greatly minimised. War then would only be an accident and not continue to be a logical sequence of the industrial nature of the world economy.

CHAPTER LXIII

WHAT IS WELFARE

When we are concerned with a science which has as its object the study of the behaviour of man, we are immediately brought face to face with the ultimate end of all human endeavour, the attainment of happiness or welfare. No science as such can undertake to analyse and probe into all the facets of this vast problem. Each art or science tries to examine only that facet of the huge surface that falls within its scope. Economics as a science studies welfare as conditioned by the scarcity of means at the disposal of man.

Welfare is an abstract concept and like so many other abstract concepts, it is very difficult to define it in a precise manner. Welfare is generally associated with such words as well-being, happiness, contentedness, satisfaction etc. These words, of course, are not the same as welfare, nor do they mean the same thing. There are shades of difference which it is extremely difficult to lay down in words. But there is one fact about welfare which we can unequivocally state, without fear of misinterpreting the real import of the word; it is that welfare pertains to 'good' i.e., whatever the exact definition of the concept, its general nature will be one belonging to the domain of 'good'. 'Good', also an abstract concept, deludes exact definition. We can just visualise what 'good' is in our own minds; beyond that we can only say as George Moore says 'good is good'. It is a difficulty of this nature that we are faced with when essaying on the task of defining welfare; and as in the case of 'good' we can only form an idea in our mind as to what welfare is and when asked to describe that idea we can only say welfare is welfare or probably as Pigou says - "Welfare is the same thing as good".

A lack of proper definition of any concept is generally the cause of confusion in regard to its exact understanding. There are, as will be evident, many ways in which the essential nature of the concept may be defiled by the intrusion of foreign elements which do not belong to it; or it may be impoverished by the exclusion of some others which essentially belong to it.

We cannot define want (in the sense of being analysed) as we cannot define welfare. We have therefore to be at pains to find out what are the elements that compose a want. We may regard the existence of willingness to part with the means necessary for satisfaction as an intrinsic factor in the nature of want, or we may not. Similarly we may hold the capacity to satisfy a want as an essential pre-requisite to the existence of want or we may not. We may actually do away with both these conditions and give to want a broad connotation. It is evident that these alternative ways of understanding the concept of want are widely different from each other. Therefore it is necessary in order to steer clear of all confusion to state unequivocally as to what is intrinsic to the concept and what is not. We have to be clear in a similar manner in regard to the understanding of welfare: what is it then that constitutes welfare? We can answer this question thus; Welfare is constituted by states of consciousness, i. e., welfare is a psychic phenomenon, including in itself a particular condition of the mind. It necessarily follows that nothing that cannot be defined as a state of consciousness will be included in welfare. Material things or material conditions, therefore, are not to be regarded as included in welfare. We cannot, for example, include in the estimation of welfare, a radio, as such, that is, as an object which is made up of so many particles of matter.

Another thing which is necessary for a clear understanding of welfare is that it can be brought into the category of greater or lesser. If there are two states of welfare, belonging either to different periods of time or to different individuals or groups of individuals, we can by comparing them say that the welfare in this case is greater or less than the welfare in the other case. This type of comparison is consequently different from a quantitative measurement of the type where a piece of steel is said to be 5 pounds in weight or a building 20 feet in height. These measurements are considered exact, where very nearly the precise magnitude of a thing is measurable. In the case of welfare, we cannot have such a measurement, so that we are unable to say that welfare is equal to so many units of a standard. We can only make a relative computation of two states of welfare.

Economic Welfare. We have, thus far understood welfare

in general. Our present study is not concerned with general welfare but with economic welfare. Economic welfare is only a part of general welfare. What therefore we have said about the whole also holds good for the part. In other words, economic welfare is a state of consciousness and that it can be brought into the category of greater or less. Pigou defines economic welfare thus: It is welfare arising in connection with the earning and spending of the national dividend, or, in other words, of those parts of the community's net income that enter easily into relation with the measuring rod of money.

Welfare, as has been said before, is a state of consciousness. This state of consciousness is characterised by its sameness with what is good. It will therefore be different from any state of consciousness which does not have that characteristic. Now at any given time there are numerous causes operating, which have an influence upon our consciousness. There are some which result in producing welfare while there are others which do not. Among those which produce welfare, there is a vast and variegated variety, with only one thing in common and that is the power to produce welfare. There is, however, a category of causes which we can differentiate from the others due to a peculiarity which is not shared by all viz., a connection with the earning and spending of the national dividend. The national dividend, as will be explained later, consists of various types of services which are available for consumption, and which can be measured in terms of money. Now when these services pass through the factory of our body they produce a state of welfare. This welfare is known as economic welfare. It is only a part of total welfare, and can be produced by any cause which is connected with the national dividend.

We must at this point make a further distinction. Not the whole of the welfare arising out of the operation of causes connected with the national dividend is economic welfare. There are, as Prof. Pigou states, certain good and bad qualities arising out of income-getting and income-spending which are not to be included in economic welfare. Two examples will explain the point. The income earned through unfair or illegal means may not be conducive to as much welfare as the same amount of income honestly obtained, due to the

presence of a feeling of guilt in the sub-conscious. Or the smoking of a particular brand of cigar might give a larger amount of welfare to a particular individual because of certain memories attached to it, than will the same brand of cigar give to another individual with similar tastes and temperament. The difference between the two sets of parallel cases is due to the bad and good qualities along side with the creation of economic welfare. These qualities are responsible for a certain psychic return which is different from the psychic return we are concerned with in economic welfare. Thus it is evident that a part of the total psychic return only, when particular services pass through our body is to be regarded as creating economic welfare. This part is that which corresponds, though not entirely, to the term 'satisfaction', as it is used in the science of Economics. It corresponds, to be more specific, to the satisfaction which is obtained from the removal of conscious and not unconscious wants. Satisfaction arises, we know, as a result of the removal of a conscious or unconscious want. If (continuing the example of the cigar) the want is for a cigar, then the satisfaction obtained will be due to the removal of the pain present on account of the desire for smoking a cigar. When the cigar is smoked this pain is replaced by pleasure and we say satisfaction has been obtained. The pleasure derived because of memories brought back is incidental (unless it is definitely desired from the beginning) and in that case there will be no conscious want for it and hence no satisfaction in the sense with which we are concerned here. Thus considered economic welfare becomes only a part of total welfare.

This being so, it is evident that changes in total welfare and economic welfare bear no rigid relationship with each other. A change in the total welfare may not mean a change in economic welfare also or a certain change in economic welfare may not result in an equivalent change in the total welfare. It is not even necessary that total welfare should increase with a certain increase in economic welfare. It is likely e. g., that the harm done by the consumption of drugs may be completely outweighed by the momentary satisfaction obtained from their consumption. The obvious reason for this is that the specific cause operating at any time, while changing the economic welfare, also affects non-economic welfare and changes it. If it is possible to isolate the effect

of the cause on economic welfare, then any 'addition to it, would be exactly reflected in the total welfare. But since this is not possible, the total welfare is not only augmented or reduced due to changes in economic welfare but also due to the simultaneous changes in non-economic welfare.

The fact that the effect of a cause upon economic and non-economic welfare is so intricately linked up brings us face to face with a very serious problem. It is, as a matter of fact, tantamount to saying that the study of economic welfare does not serve any useful purpose, since it does not seem ascertainable as to what extent and in what manner changes in economic welfare will cause alterations in total welfare. For the study of economic welfare can become useful only when it can inform us definitely about its effect upon total welfare, because then alone can statesmen and economists introduce causes which will augment the total welfare. But, as the facts are, this seems well nigh impossible. A cause may be introduced which would increase the economic welfare of the community considerably, but may not register any material gain in the total welfare. What purpose then would the introduction of such a cause serve. For ultimately we are concerned with total welfare, the overall happiness of man and not with a part of it.

This, undoubtedly, is a very damaging argument against the study of economic welfare as a useful and fruitful occupation. But, there is one argument which justifies the study of economic welfare. It is beyond question that a change in the part may not change the whole by its full amount; as a matter of fact it may not change it at all. Yet this change in the part will have its full effect upon the whole. If the part changes, say, by a certain amount, though the whole may not change by the same amount, yet the impact of the change in the part will have its effect on the whole. In other words though we may not be able to tell what total welfare will be when a certain change takes place in economic welfare, we will be able to tell what total welfare would have been had there been no change, in economic welfare. But even in accomplishing this in reality there will be no obstacles in the way.

first difficulty arises in connection with the effect that a specific cause in operation has upon non-economic welfare. Two causes influencing economic welfare may produce identical changes in it and therefore may lead us to conclude that the effect of both these causes will also affect the non-economic part of total welfare and this may not be identical in both cases. This latter is not merely a theoretical possibility but a very palpable reality which almost invariably occurs. In such circumstances the significance of the two causes in relation to total welfare will naturally be completely changed.

Let us now examine how economic causes affect non-economic welfare. They affect it both directly and indirectly.

Direct Effects of Economic Causes on non-economic Welfare. Welfare is a state of consciousness. This state of consciousness is not solely composed of satisfaction, but has with itself, cognitions, emotions, and desires as well. Hence a cause affecting satisfaction will also have an effect upon these other elements, which lie side by side with satisfaction. An act of consumption which adds to our satisfaction does not go without effect upon our desires or emotions. When a person does not smoke, he has no want for a cigarette. But when he starts smoking and begins to derive satisfaction from it, his desire for cigarettes begins to be affected. The more he smokes, the intenser becomes in general his desire for cigarettes. Now this intensification of his desire may go to the extent where the number of cigarettes smoked causes physical harm to him. This latter would produce a new effect upon total welfare besides that produced on it due to an addition in economic welfare. This is an example that shows how desires are affected by economic causes. The effect is, however, not limited only to desires, but spreads to the whole of a man's personality. It is a historical fact that the character of a people, the very life that they live, has been altered by economic surroundings. It is not an unusual statement that the moral and ethical qualities of a people are completely modified by the type of occupation they are engaged in. These qualities will be different e. g., in a menial servant and an artist, in a mill worker and peasant. Not only this but such things as *esprit de corps* or fellow-feeling or patriotism may arise out of working together in factories. All these factors will not only alter the

amount of wealth produced but will have a significant effect upon the total welfare of the community. The existence of an antagonism between the workers and the employers, which arose due to the increase in the size of the factories and the introduction of large scale production, is another example of the effect of an economic cause upon non-economic welfare.

Indirect effect of economic causes on non-economic welfare. Indirectly economic causes may influence non-economic welfare, through objective conditions other than those connected with the national dividend. There are two ways in which this may happen .

- (i) Services rendered by certain objects of natural beauty.
- (ii) Services rendered by some people for which no payment in money is made.

An example of the first case where economic causes affect the services rendered by objects of natural beauty, can be given from Lowellyn's novel "How Green was My Valley," where he very touchingly describes how the beauty of a valley is gradually destroyed by the accumulation of slag from the adjoining coal mine. The blackening of the face of a factory town by the unending spiral of smoke and coal dust is another example of this type. A very true example of the second type is found when the women-folk of a particular community are forced out of jobs because of a fall in the demand of men's labour and are confined to their work in their home. The unpaid services that they render are one of the most significant factors in any community's welfare.

Thus we have seen how economic causes directly or indirectly influence non-economic welfare and thereby are a great obstacle in the way of estimating the effect of an economic cause upon total welfare.

II. The second difficulty arises in connection with the assumption that satisfactions and dissatisfactions are measurable in terms of money. It is only through such an assumption that we can think in terms of the magnitude of economic wel-

fare, which is formed by satisfactions and dissatisfactions. Now satisfaction is a state of consciousness and therefore cannot be directly related to any concrete standard or measure. We can, however, have an idea of the magnitude of satisfaction through the intensity of desire whose removal has produced the satisfaction. If the desire is very intense, then the satisfaction obtained must also be equally large while if the desire removed is insignificant, the satisfaction obtained must also be insignificant. We know that a particular cause may increase satisfaction by a certain amount but may not increase total welfare by the same amount, due to its simultaneous effect on non-economic welfare. The question now is, whether it will be able to change the total welfare, by its full amount if it can be assumed that there is no effect on non-economic welfare or that this effect is negligible. The answer to this question will be in the affirmative, only when another condition is fulfilled, otherwise not, the condition being, that every desire of equal intensity must involve when satisfied an equivalent amount of 'good'. For unless this condition is fulfilled how are we to know what is the extent to which total welfare will change because the only measure for this is the intensity of desire, and if two desires of equal intensities can produce two different results, our measure for satisfactions becomes useless, at least as far as total welfare is concerned. There are two reasons why desires of equal intensities will not produce equivalent amount of 'good'.

(a) Suppose, that the object of a particular desire is such that it is conducive to some positive 'good'. Also suppose that the intensity of the desire is directly proportionate to the 'good' that is expected out of the satisfaction of the desire. In other words the greater the intensity of the desire, the greater the good expected out of its satisfaction. Now if the expected 'good' and the actual 'good' obtained from the satisfaction of a desire, are the same then the addition to total welfare, when two desires of equal intensities are satisfied will be the same.

But in reality this very rarely happens. Our capacity for anticipating correctly matters in the future are so inadequate, that in most cases our expectations are belied by facts.

This being so, any definite relationship between the intensity of desire and total welfare is difficult to formulate.

(b) The above reasoning was based upon the assumption that the intensity of desire is proportionate to the 'good' it is expected to yield, and we proved that there is no fixed relationship between the expected 'good' and the actual 'good' obtained. Now we have to find whether there is any relationship of proportionality between the intensity of desire and the 'good' expected. Experience proves that no such relationship exists in practice. Here again we are balked in our attempt to establish some precise connection between changes in satisfaction and change in total welfare. Franz Bentano has made an observation to this effect which is worth noting. "The actual presence of love by no means testifies unconditionally to the worthiness of the object to be loved..... It frequently happens that a person even while loving something confesses himself that it is unworthy of his love." The case of opium eating, where the 'good' expected is not in proportion with the desire is quite in point here; as also the intensity of desire for higher wages, when it is expected to be spent on some low exciting pleasure. The above discussion has made it abundantly clear that any clear-cut and rigid relationship between economic welfare and total welfare is out of the question. In certain cases the divergence between the two might be very wide, in others it might be negligible. Should we then despair of the study of economic welfare? No, for inspite of all this, there is room for a judgement of probability. That is, unless it is definitely known that the other effects of an economic cause are working in the opposite direction, it can be presumed that the effect on economic welfare is probably equivalent in direction though not in magnitude to the effect on total welfare. Therefore, as Professor Edgeworth says, there is an "unverified presumption" that the effect of an economic cause on economic welfare will hold good also for the effect on total welfare.

National Dividend. There are a few causes which operate directly upon economic welfare. In general they operate through the magnitude of the national dividend, considered not only as an absolute quantity but also as a sum distributed between different persons or groups of persons and between

different parts of time. Thus in general a particular cause whose effect on economic welfare we wish to investigate, will operate through any one of these three conditions of the national dividend, viz., its absolute magnitude, its distribution between persons and its distribution in time. By studying the influence of the particular cause upon the national dividend and by establishing a general relationship between the national dividend and economic welfare, we can find out the impact of the said cause on economic welfare. But before we can accomplish this, we must first analyse more carefully the nature of the national dividend itself.

Prof. Pigou defines National Dividend thus:-

"The ultimate elements of which the national dividend is composed consist of objective services, some of which are rendered through commodities while others are rendered direct." The objective services rendered through commodities can be regarded as consisting of the sum of 'good' that are available for consumption, while services rendered directly consist of such services as those of a physician or a lawyer. This latter type of service has been referred to by many authors as 'services' while those rendered through goods are referred to as 'goods'. Hence the use of the phrase 'goods and services' in connection with the national dividend.

When we refer to the national dividend as consisting of 'goods and services' we often open ourselves to an obvious risk. It is possible that in a computation of the magnitude of the national dividend we might add up the services of the same thing twice, first under the head of 'good' and subsequently under the head of 'services'. This is not a remote possibility but something which very commonly occurs unless very carefully avoided. It is possible to enter into our addition the services of the pie, as well as that of the cook, who made the pie. Actually one of the two should be brought into our calculation. The services of the cook are valuable only in as much as they are capable of producing a pie and the pie is valuable or serviceable as long as it is in the shape in which the services of the cook have rendered it. The pie as pie actually is nothing but the services of the cook who made it. Thus if we count the service of the pie and the cook both, we

will be counting the same thing twice over and therefore will be guilty of the error of double-counting. Such a calculation will, therefore, naturally give us a very erroneous idea of the national dividend. On large-scale a similar error will occur if we count up separately the services of raw materials and the finished products and add them up. A similar mistake would be made if we were to add up the services of a locomotive and the value of the shares of the company which produces that locomotive. The result will be far from a correct index of the national dividend. Thus when calculating the national dividend, such double-counting must be avoided.

To avoid double-counting, what is done is not to make a catalogue of all the services entering into the national dividend, thus producing an inventory of the national dividend, but to estimate the money value of all these services in such a manner as would avoid the risks of double-counting. The method followed for such an estimation is to find out the net output of an industry or a group of industries. The net output can be found, according to the Preliminary Report of the census of Production of Great Britain by "deducting the total cost of materials and the amount paid to other firms for work given out from the value of the gross output for any one industry or group of industries" This will give a figure which may for convenience be called the 'net output' of the industry or the group of industries. This figure tells us by how much the value of the products of the industry or the group of industries exceed the value of the raw materials purchased from outside. In other words this figure represents the value added to the raw materials in the course of manufacture. This sum also "constitutes for any industry the fund from which wages, salaries, rents, rates, taxes, depreciation and all other similar charges as well as profits have to be defrayed". Such a form of counting avoids the possibility of duplication and very nearly a correct figure is obtainable for the national dividend of the country. If the net output of all the industries in the country along with the net products of the country's capital invested abroad is added up we obtain a catalogue of the whole of the national dividend of the country expressed in terms of money. Thus it is due to this danger of duplication which is present in regarding the national dividend as the sum of 'goods and services' that makes Prof. Pigou and Prof. Fisher prefer the

single term 'services' for it and thus avoid confusion. Prof. Pigou's grounds for doing so are purely practical and are not based on any differences on matters of principle. Prof. Fisher, however, differs on principle. We will here follow Prof. Pigou.

Which services are to be included in the National Dividend?
There are a large variety of services obtained by any nation or community. All of these services are, however, not included in the national dividend. Certain services though regarded as services are yet excluded from any estimation of national dividend. The criterion which Marshall employed and which Prof. Pigou has taken over for segregating the services, that are not to be included in national dividend from those which are to be included, is the measureability of the services in terms of money. As Pigou says, those services are to be included in the national dividend which can be brought into relation with the measuring rod of money. Such a criterion is not justifiable on theoretical grounds, because the characteristic of a service is not its measureability in any terms but its ability to benefit the people and add to the total welfare of the people. If a service fulfils this condition, it is a service whether it is measureable in terms of money or not, and should be included, on principle, in any estimation of the national dividend. Prof. Pigou admits of this argument and declares that his criterion, on principle, is not justifiable. The reason why he chooses the criterion at all is practical utility of it. If all services were to be regarded as inclusive in the national dividend then it would become well nigh impossible to calculate the total national dividend, for a part of it would not be measurable in terms of the only standard of measurement we have for value. Therefore, for the sake of convenience we ought to consider this criterion employed by Marshall and then by Prof. Pigou as sufficiently justified. According to this criterion, in the national dividend are included all those services which can be bought by money income, along with such services as a man obtains from a house that belongs to and is inhabited by him. But those services which a man renders to his family or to his friends gratuitously are not included in the national dividend. Nor included in it are the services obtained by a person from his own personal goods (such as furniture and clothes) or public property such as toll-free bridges etc. It

is thus that the national dividend will be considered in the pages that follow.

Gross and Net National Dividend. From what we have said above it is clear that there are two groups of services among those included in the national dividend. The first group consists of those services which directly result in psychic income or satisfaction. The second group consists of services which are employed in the production of such instruments for yielding other services, as in the future will be converted into psychic income. For example, the services of doctor or a barber immediately give satisfaction, whereas the services rendered by a technical labourer in manufacturing a machine will not result in any satisfaction unless this machine is employed for some purpose which results in direct satisfaction. The sum of all these services both of the first and second group put together Prof. Pigou calls the gross national dividend. The problem now is what part of this gross dividend should constitute the true net national dividend? Are the services of the first type alone to be included in the national dividend, or the second type alone? Or a part of both the types?

Marshall's solution. Marshall in his definition tries to state what part of the gross national dividend according to him should be included in the true national dividend.

"The labour and capital of the country acting on its resources, produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. This is the true net annual income or revenue of the country or the national dividend." Elsewhere he adds: "If we look chiefly at the income of a country, we must allow for the depreciation of the sources from which it is derived." Thus Marshall's net national dividend is comprised of the gross national dividend minus that part of it which suffices to maintain the capital of the country intact. In other words Marshall's net annual national dividend is not equal to the sum of services available for immediate consumption in a given period of time, say, a year. If during the year a certain amount of net savings are made by the people thereby creating new capital, the net national dividend would become greater than the sum of the services available for immediate consump-

tion in the year, because the dividend will include this capital, over and above all the other services. On the other hand if nothing is provided for depreciation of plant, i. e., no repairs and renewals are made, then the net national dividend will be less than the sum of services available for immediate consumption; for out of this total the national dividend will not include that amount which should have been put by for repairs etc. Thus Marshall admits that the net national dividend may not be equal to the total amount of services available at any given time. As a matter of fact the dividend is likely to be either greater or less than this sum, depending upon circumstances.

Prof. Fisher's solution. Prof. Fisher disagrees with Marshall on principle. According to him the net national dividend is formulated by those services alone which enter into consumption. In his analysis it is impossible to regard savings as forming a part of income. Marshall regards new capital as part of the net dividend, Fisher finds it impossible to regard new capital which is savings as a part of the net dividend, which is income. Savings according to him cannot under any circumstances be income. This is Fisher's first criticism of Marshall in the light of his own analysis.

His second criticism is that Marshall does not concern himself with what the net national dividend is, but with what it would be if the capital of the country was maintained intact. If the capital is not maintained then a part of the services available which satisfy all conditions of belonging to the national dividend will be regarded as not belonging to it for the simple reason that they should have been employed for maintaining the capital of the country and that they have not thus been employed. Fisher's idea on the other hand is that we are concerned with what is and not with what would have been. For it is the existing that has its influence on the economic welfare of the people.

These two viewpoints of Marshall and Fisher are very widely apart, both materially and analytically. The only occasion where they can become identical, and that too materially, is when the resources of the country are so organised that a certain proportion of them exactly fulfils the requirements

of depreciation and replacements. For otherwise, if that part of the total resources which is kept aside for depreciation of capital falls short of the requirement by a certain amount then the national dividend will become less than the total sum of services available for consumption by an equivalent amount because it will not include within itself that part of the total resources which ought to be employed for maintaining the capital of the country. Similarly if the proportion of the total resources reserved for depreciation is larger than what eventually is necessary, then the excessive amount will become savings and hence add to the national dividend by an equivalent amount. There will therefore be no equality between the national dividend and the sum of services available for consumption in either of these cases. A situation where the amount reserved for depreciation exactly equals the amount eventually required is very difficult to imagine in reality. For such a thing to occur under normal conditions and not as an accident, it will be necessary to foresee things exactly, and thereby provide exactly. In reality it is impossible for anyone to have a precise fore-knowledge of anything. Discrepancies will, therefore, naturally occur.

In a state of affairs where everything is at a standstill, however, no such discrepancy is likely to arise. Because under such a condition everything will be constant and stationary, and consequently there will be no possibility of any ambiguity arising due to uncertain changes taking place in time; exact fore-knowledge of changes in the future will not be necessary. If, for example, the rate of depreciation is calculated once and supposing it is found to be 10%, this rate of depreciation will become constant for all time because every thing is stationary. Hence it would become possible always to allow for the exact amount of depreciation which will precisely cover the charges for depreciation. There will of course be no possibility of anything becoming obsolete for by assumption there will be no progress.

Unfortunately a stationary state is also an imaginary state, and we are concerned not with it but with reality, which is dynamic and full of wily changes. Thus there also arises a difference between the maintenance of the plant, which is merely the maintenance of the physical efficiency of the plant

and the maintenance of capita¹ as a whole at the same level of efficiency. This is so because in a dynamic state there must be progress and progress will naturally entail certain developments and improvements. These developments will render some machines and processes obsolete and out of date. Such obsolete machinery may be in a first class condition physically speaking, but cannot be regarded as intact for it has got no use. Similar will be the fate of the machine which is employed in producing a type of commodity which suddenly goes out of fashion because of a shift in the taste of the consumers. Thus it seems evident that according to the Marshallian analysis there is very scant possibility of the net national dividend being equal to the sum of services available for immediate consumption. The criticism of Fisher that this treatment of national dividend is concerned with not what is, but what ought to be, therefore, holds good.

Let us now examine Fisher's theory and find out to what extent it will overcome the weakness in Marshall's theory and provide a correct and workable solution to the problem of net national dividend. But before we set ourselves on this task, let us be absolutely clear as to what is the essential purpose of studying national dividend and what is the aim which must be kept in view in any analysis which concerns itself with the problem of the national dividend.

Our fundamental objective is the study of economic welfare. We are concerned with national dividend because causes which affect the economic welfare, do so, not directly but through the magnitude of the national dividend. Thus the study of national dividend should be undertaken with the explicit purpose of finding how and in what manner causes affecting the national dividend, will affect the economic welfare. Any study which will not bear out this fundamental objective is likely to be of not much use.

Let us now resume the examination of Fisher's theory, in the light of what we have said in the above paragraph. Suppose there is a cause in operation such as influences the national dividend, we have to find out what will be the effect of this cause on the national dividend say in the year 1950. Now according to the theory of Prof. Fisher the difference

made to the dividend by the cause will not be confined to the year 1950, but will be extended to all the subsequent years. For if the cause is such that it induces savings then since savings are not to be included in the national dividend, they will become income in the future and thus will have to be accounted for then. Accordingly the aggregate effect produced by the cause cannot be reckoned in one year but has to be reckoned in a series of years. In the case of Marshall, the case is different. When we estimate the effect of the cause on the national dividend in 1950 we implicitly include in this the effect it will produce on consumption in the subsequent years also. Supposing a typewriter is produced in 1950, according to Prof. Fisher, not the whole value of the typewriter but only the rental value of the services rendered by the typewriter are to be included in the dividend of 1950. This will be in accordance with his analysis in which only those services are to be reckoned, which are immediately available for consumption. Hence only those services of the typewriter will be reckoned which are available for use in the year 1950. These services will be measurable by the rental value of the typewriter for that year. This rental value will be reckoned every year subsequent to 1950 until the time the typewriter is capable of rendering any service. Thus the total affect of the manufacture of a typewriter is not to be reckoned in a year but in a series of years.

In the case of Marshall, however, the total capital value of the typewriter will be taken into consideration and this includes the effect on consumption not only of 1950 but of subsequent years as well. What Prof. Fisher measures therefore is not the total effect of the cause but its immediate effect. We are, however, concerned not with the immediate effect but the total effect of a cause, specially because our main object is to relate national dividend with economic welfare. It is through total consumption of a commodity that its effect can be estimated on economic welfare.

It is on these grounds then that Marshall's plan is better than that of Prof. Fisher, though from the standpoint of dialectics his plan is inferior to Prof. Fisher and labours under many defects. We will, therefore, follow Marshall in our treatment of the subject.

NATIONAL DIVIDEND AND ECONOMIC WELFARE

Understanding national dividend in the manner described above and also assuming that the national dividend is homogeneous, i.e., one continuous whole, we can proceed to examine more precisely what the effect of changes in national dividend will be on economic welfare of a nation or any community of people. It is important to regard the national dividend as homogeneous for otherwise the complication arising due to the real heterogeneous nature of the national dividend will be of so intricate a nature as would make any general statement very difficult. Therefore the treatment of the question will be undertaken in a very general way and the conclusions arrived at will also be general.

Considered thus three propositions can be laid down as arising out of the relationship of the national dividend with economic welfare.

I. If due to the operation of a cause there is an increase in the national dividend, other things remaining the same, there will also be an augmentation in the economic welfare. This augmentation will not be possible, if the result of the increase in the national dividend is a relative increase, as far as the particular group under consideration is concerned. If the absolute share of this dividend, represented in terms of goods which the group is chiefly accustomed to consume does not decrease then the result will be a definite augmentation of the welfare. If there is an increase in the goods other than the ones the group is accustomed to consume then there will not be an increase in economic welfare in spite of the increase in the national dividend. For example if the supply of cars increases for a particular group of people who are not accustomed to use cars then though this will be an increase in the national dividend it will not entail an augmentation of the economic welfare of the group. But if on the other hand there is an increase in the production of, say, dhoties which are consumed regularly by the group under consideration there will be an augmentation of their economic welfare.

Now the dividend can increase in two ways. It can increase due to the operation of causes from the side of either

demand or supply. The group of causes coming under the latter head are those which enable the goods to be produced at a cheaper cost. While the causes falling under the category of demand are those which make for an intensification of demand.

A reduction in cost is generally obtained when some improvements are made in the technique of production. The result of such an improvement is usually an increase in production, unless it happens to coincide with a fall in demand. This increase in production will mean an augmentation in the national dividend; which in turn will result in an increased amount of satisfaction due to the quantitatively larger amount of services available for consumption. Similarly an enhancement in the desire for a thing will in the first place result in a greater amount of satisfaction derived from the same amount of consumption and in the second place it will lead to an increase in production in the infant industries, which in turn will themselves be a cause of or a further increase in the economic satisfaction obtained from consumption of the particular good concerned. Not only is there a possibility of a temporary increase in production due to the intensification of the demand but there is the possibility of a permanent up-grade movement in the level of national dividend, because of the inventions etc. that may follow in the wake of the enhanced interest in the consumption of a particular good. This permanent increase in the national dividend will then become a permanent enhancement in economic welfare. Similarly a temporary increase in the supply of a good may so stimulate the demand of that good that there may occur a permanent intensification of the demand for that good. This will be so, specially if the good concerned is such that its demand can be said to be in the infant stage. Again in the case of new things the use of which has not become popular enough, the same result will be obtained. Of this latter there will be an indirect effect too. Some desirable thing can be made popular, which will not only give more direct satisfaction, but will also produce indirect results that might enhance welfare, as, for example, the popularisation of savings banks among the poor.

II. Economic welfare is likely to be increased, other

things remaining unaltered, if the distribution of the net national dividend becomes less unequal. This general proposition is easily explained. Take a simplified case where there are only two persons, one rich the other poor, with similar temperament and tastes. Now a transference of income from the richer to the poorer will mean the satisfaction of a larger number of wants of the poorer person. A rich man is easily able to satisfy most of his intense wants, leaving only the weaker wants unsatisfied. On the other hand a poor man cannot even satisfy his intense wants. This will be borne out by the law of diminishing utility. According to this law the marginal utility of money to a rich man is much smaller than it is to the poor man. So that with the same amount of money at the margin a rich man will be able to derive much less satisfaction than a poor man. In other words if the income of a rich man was reduced say by Rs. 5/- the loss to him of utility will be much less than the gain in utility caused by a rise in the income of the poor by an equivalent amount. The reason is that the utility of Rs. 5/- at the margin to a rich man is less than it is to the poor man. Hence any transference of income bringing up the level of the income of the poor at the cost of the rich will produce a net addition to the utility gained by the rich and the poor put together. Thus in a society where such a transference takes place it will mean, a small loss to the rich but a big gain to the poor, with the result that the society as a whole will stand to benefit by an increase in total welfare.

There is, however, one provision in this connection which must be kept in mind. When a redistribution of the national dividend is made with a view to transfer some of it from the rich to the poor it must be remembered that the total magnitude of the national dividend should not change. For if this changes then the economic welfare of the people will be affected in the manner laid down in the first proposition. If, for example, the total national dividend decreases while the transference is being made, it is likely that the increase in economic welfare caused by this transference may be nullified by the decline in the welfare caused by a decrease in the national dividend as a whole. Keeping this fact in view Prof. Pigou has laid down the proposition thus : "If a cause is introduced which makes for an increase in the absolute share

of relatively poor groups of persons (in terms of the commodities which these groups are accustomed to chiefly consume), provided that the magnitude of the aggregate national dividend (in terms of commodities in general) does not decrease, economic welfare is likely to be augmented."

We have made an assumption in laying down this proposition, viz., similarity in the temperament of the people we are concerned with. When explained, this assumption means that the people of various classes should have the same capacity for enjoyment and for obtaining satisfaction from the consumption of commodities in general. An example shall explain the case. If more money is given to a poor man, he can if he likes to, buy a dhotie of a superior quality, the like of which he is not accustomed to. Supposing he is so constituted that it is impossible for him to derive any extra enjoyment from this superior quality of cloth; will this extra amount of money then spent on a superior quality of dhotie add to his economic welfare. Obviously not. The satisfaction obtained by him will be equal to that obtained by the consumption of an inferior quality of dhotie to which he is accustomed and the extra amount of money spent for the superior quality will be of no account. This kind of argument was very commonly put forward by nations of more advanced culture a few decades back in regard to people who were considered backward. It was alleged that these backward people were not capable of appreciating a standard of living higher than the one they were used to, and therefore it was a waste of effort to provide for any facilities that would help in increasing their standard of living and thereby help in augmenting their welfare. Such arguments are very rarely heard now. There is no doubt that some people cut-off from modern civilisation may not be able to appreciate immediately the amenities provided by it. But this, however, is not reason enough to believe that they will never be able to appreciate these things. With time and education they can as easily get used to these things as any of the other more fortunate people. Thus the assumption of similarity in temperament and taste is a theoretical assumption which in practice does not change our conclusions very much.

An objection is sometimes made against a proposition

of this kind on other grounds. It is stated that an increase in the wages of work people is not likely to augment their economic welfare, because it is dissipated in worthless forms of exciting pleasures. The increase in the use of harmful intoxicants under such circumstances is not an unusual thing among the workpeople. But this objection too is not valid. Because such a behaviour in the working classes will be seen only if the rise in wages is sudden and temporary. If this increased income subsists for any length of time, it will gradually be employed for more useful purposes and will then augment the economic welfare of the people. Even the danger of initial waste can be prevented if the rise in wages takes place gradually, and not unexpectedly. Only sudden jumps in income lend themselves to bursts of wasteful expenditure. It has been maintained by many an authority that security of employment and higher wages are always conducive to respectability and character. It has also been observed that these two conditions are inversely related to the drink bill.

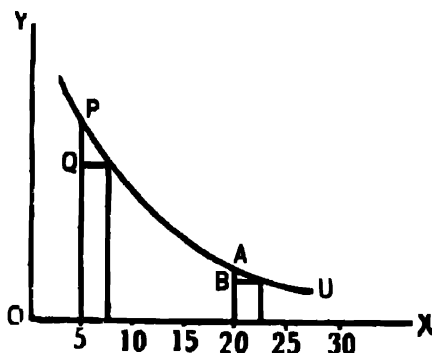
Another objection generally put forward in this connection is that an increase in welfare generally stimulates the birthrate among the working classes. The objection is the survival of the old 'iron law of wages', according to which an increase in the number of the workers always tends to keep the income of the workers at the subsistence level. This line of argument need not detain us long, for it has long been refuted by the evidence of facts based on statistics collected for the workers whose wages have been increased. It has been found that an increase in wages, through education, general broadening of outlook and refinement of character and feeling towards the children makes for smaller families.

III. If a cause is introduced which by its operation diminishes the variability or inequality, in time, of the dividend and specially that part of it which accrues to poorer classes, then, in general, the economic welfare of the community will tend to be augmented. Under conditions as exist in real life nothing is stationary, everything is in a state of constant change. The world is not static but dynamic. There is, therefore no doubt that the dividend will also be subject to this changeability. Our proposition states that lesser the

changeability of the dividend specially in the case of the poor greater will be the economic welfare enjoyed by the community as a whole. The effect of this variability is registered on the economic welfare of the poor people to a greater extent and therefore a cause which tends to reduce this variability in the case of the poor is likely to produce a net gain as far as the whole community is concerned.

In order to substantiate our point we will put forward an abstract proof as well as a proof taken from experience in everyday life. On theoretical grounds the proof can be thus stated. According to the law of diminishing utility, as the stock of money held by any individual increases the utility of the marginal unit of money goes on diminishing to him. Moreover, not only does the marginal utility diminish but it diminishes at a diminishing rate. This latter is consequent upon the convexity of the utility curve to the origin. Now if this is so it is evident that when a small stock of money is held as in the case of the poor, the rate at which marginal utility changes will be much greater than the rate of change when the stock of money held is larger and the extent of change in it is the same. An example will serve to explain the point. Supposing there are two persons *A* and *B*, the former being relatively richer. Supposing their relative incomes are Rs. 500/- and Rs. 50/- respectively. If now there is a change to the tune of Rs. 10/- in the income of both, the difference in terms of utility will be much greater in the case of *B* than in the case of *A*. If there is a fall in the income of both it will mean a loss of utility and welfare to both but the loss to the poorer person will be much greater, because the utility curve of the poor man at the margin is much steeper than the utility curve of the rich man at the margin. Each unit of money represents a larger sum of utility to a poor man than to a richman at the margin. This can be illustrated by a diagram: In the following diagram supposing '*U*' is the utility curve. Along the '*X*' axis is measured the income and on the '*Y*' axis the utility. Now when the income of a man is Rs. 5/- and is increased by say three rupees, the change in terms of utility will be represented by '*PO*'. A similar increase of income by Re. 3/- in the case of a man with an income of Rs. 20/- will result in an increase in utility to the extent of *AB*. From the diagram it is evident that the change produ-

ced by an alteration in income of the same amount is much greater in the case of the poor than in the case of the rich. As long as the utility curve remains convex to the origin, this



will be the unequivocal result. It is possible therefore to increase the welfare of the whole community by decreasing the variability in the case of the poor even at the cost of increasing the variability in the case of the rich. Thus a cause introducing such a change in the relative variability in the income of the two classes will bring about an increase in the welfare of the community as a whole.

From experience we draw the following proofs:

1. A variation in income not only involves the loss of present satisfaction but entails consequences injurious to welfare in future. Furthermore these consequences are more injurious when they attach to the poor persons. The effect is likely to be both on physical and moral plane. On the physical plane the lack of means which variability in income will necessarily involve from time to time will undermine the strength of the workers, specially of the younger ones. This lack of means may also result in a permanent weakening of the moral fibre of the people. Experience has over and over again shown this to be true. Statistics regarding the Poor Law in England have borne ample proof of this.

2. Variability in the consumption of the poor brings about, in various degrees, a variability in employment. Fluctuation in the consumption of the poor is reflected in the amount of their demand for commodities which they habi-

tually consume; which in its turn is reflected on the quantity of production of those commodities. A fluctuation in the quantity of production naturally results in a variability in employment, in the sense that there are periods of full employment and period of idleness for some. That this variability in employment is a social evil is very easily perceived. This enforced idleness is the cause of much economic and general inefficiency. It has been generally found that drunkenness increases during a period of slack employment. The effect of such idleness has been very well surmised by the Royal Commissions on the Poor Law: "The enforced idleness on completion of a job naturally throws the men upon their own resources, which is, in nine cases out of ten, the nearest public-house. The frequent change from strenuous hard-work to absolute indolence to men of this character naturally tends to gradual moral and physical degeneration and ultimately the individuals become unfit for work, even when opportunity offers".

3. Both these facts put together, i.e., variability of consumption and variability of employment, bring about in the minds of the workers a strong sense of insecurity and uncertainty. Prof. Leroy-Beaulieu's remark in this connection in his book "*Repartition des richesses*" is very true, and worthy of deep consideration: "It is not the insufficiency of pay which constitutes in general and apart from exceptional cases, the social evils of to-day but the precariousness of employment."

MEASUREMENT OF THE NATIONAL DIVIDEND

Thus far we have assumed that the national dividend is a definite and unambiguous quantity. When we laid down the proposition it was taken for granted that the increases or decreases in the national dividend were definite movements in one or the other direction. In fact we have considered the increases and decreases in the national dividend as we would consider increases in the supply of commodity. But in reality this is not so. The national dividend is not one single whole, like say rice or cement in regard to which we can precisely shape that so much of it is distributed among so many people in such and such a proportion. National

Dividend is received by a community in small dribblets of a large number of things and not one single chunk of some one thing. Even so, if these small units of different things had any basic relationship between themselves, then they could be bundled together and taken as a homogeneous entity but in reality these small quantities of various things are independent of each other and they vary also independently. This fact makes it very difficult to devise a standard which will measure changes in the national dividend. At best, what can be done is to choose a standard arbitrarily with a view to the purpose in hand. The problem therefore is to find out some means of measuring changes in the national dividend, which is heterogeneous and not homogeneous as we assumed when laying down the three propositions.

The amount of services available to any individual or a community at any time depends on two factors: Firstly, the money income available as the purchasing power in hand; and secondly the price level of the commodities which the group or community concerned is accustomed to consume. The amount of service which the individual or the group will be able to command will be large if the money income is large and it will be small if the money income is small. An individual with an income of Rs. 20/- a month will not be able to command so many services as another individual with an income of Rs. 100/-. So that when there is a change in money-income of an individual, the national dividend accruing to him will also change in the same direction, if the price-level of the commodities consumed by that individual remains the same. In other words the national dividend varies in the same direction as the money income. If the money income increases, the national dividend accruing to the group also increases and vice versa.

The case is different with prices. If the price level is high and the income remains constant, the amount of services, available to an individual or a group, will be smaller than if the price level was low. So that if the prices of those commodities which enter into the consumption of the group of people we are concerned with, rise, then the share of national dividend received by this group will diminish. If, on the other hand, the price level falls, they will have a larger share of the

dividend. Thus while the national dividend moves in the same direction as the money income, it moves in the opposite direction as the price level. Changes in the national dividend, therefore, will depend upon changes in these two factors, money income and price level. If in a particular situation we take the proportional changes and not the absolute changes in these three quantities we will be able to establish a definite relationship between them. The total effect produced upon the national dividend due to changes in money-income and price level could be represented by the following equation:

$$\frac{\text{Prop. change in money-income}}{\text{Prop. changes in the prices}} = \frac{\text{Prop. change in the absolute share of national dividend.}}{\text{share of national dividend.}}$$

If we assume, for the sake of simplicity, that money-income remains constant then the proportionate changes in the national dividend will be equal to the reciprocal of the proportionate change in prices, i.e.,

$$\frac{1}{\text{Prop. change in prices}} = \frac{\text{Prop. change in the absolute share of national dividend.}}{\text{national dividend.}}$$

Now if we can find out a measure for the changes in prices, as between various periods of time or various places, we will be able to measure the proportionate changes in the absolute share of the national dividend as accruing either between various periods of time or various places. The method we can adopt for finding proportionate changes in price-levels immediately brings us face to face with the difficult problem of the construction of index numbers. Index numbers properly constructed will tell us the extent of variation in the price level, between two periods of time. We will thus be able to find the proportionate change in prices through the help of the index numbers. As we have said, by reciprocating this we will be able to obtain a measure for the changes in the national dividend. This measure of the national dividend will hold good only under certain assumptions. Briefly these assumptions are:

- (1) Money-income of the group, where share of the national dividend is to be calculated, remains constant.

- (2) The tastes and temperament of the groups remain constant.
- (3) No new commodities are introduced in the list of the commodities chiefly consumed by the group.
- (4) The proportion in which the various commodities are consumed also remains the same.

Under these conditioning circumstances our measure will be able to give us a means of estimating the changes in the national dividend. It might be pointed out, however, that such a way of measuring the national dividend will not be very accurate. It will only give us an approximately correct result.

THE BIOLOGICAL ASPECT OF PROBLEM OF NATIONAL DIVIDEND

The biologists contend very often that the enquiries we undertake under the science of Economics are futile and misdirected. The changes that we seek to bring about in the environment of man, with a view to make available for him a larger reservoir to draw his satisfaction from, are of temporary and transient character. These environmental changes, according to them, have no power inherent in them to transmit themselves from one generation to another. The basis for their contention is the biological fact that acquired characteristics are not inheritable. The germ-cell which is responsible for procreation is not related to the body in which it is lodged but is related to the series of germ-cells which have gone before it. Thus whatever be the characteristics of the body to which this germ-cell belongs it will only recreate characteristics belonging to the previous germ substance. The body is merely an offshoot, so that if the child is like the father, it is not because it is produced from the father, but because both are produced from the same germ-plasm. This being so, the biologists say that economists do not cause any improvement in welfare of mankind from a long-period point of view. What they achieve are changes in distribution of wealth, increment or steadiness of the national dividend and these improvements are purely environmental in character. These

environmental changes affect the people living in those conditions, but they have no effect on their offspring. Professor Punnett crystallises the view, when he says, that things like hygiene, education etc., are but "fleeting palliatives at best, which on postponing, but augment the difficulties they profess to solve. . . . Permanent progress is a question of breeding rather than of pedagogies, a matter of gametes, not of training".¹ Again he states in the same book—"Education is to man what manure is to the pea. The educated are in themselves the better for it, but their experience will alter not one jot the irrevocable nature of their offspring". Or as Professor Eichholz puts it, "neglect, poverty and parental ignorance, serious as their results are, (do not) possess any marked hereditary effect".²

We will examine the conclusions arrived at by the biologists from two points of view.

- (1) from the biological point of view
and
- (2) from the point of view of sociology.

In the first instance we must state that it is not an established fact even in Biology that acquired characteristics are not inheritable. The view that they are so is questioned by many eminent biologists. Thus any contention based on such a questionable ground must also be questionable. Further even if we do admit that acquired characteristics are not inheritable, we can object to the sociological conclusion drawn from it. To the assertion that environmental changes do not affect the inborn quality of the succeeding generations and therefore the environmental changes are useless, we can say that environmental changes have a lasting influence inasmuch as they can affect the environment of the future generations. Environment produces ideas and these ideas when accepted by a generation remodel the environment of the future generation. Thus changes in environment produce results which are enduring. As Professor Marshall

¹ Professor Punnett—"Mendelism"

² Eichholz—"Evidence to the Committee on Physical Deterioration"—Report.

well observes—"Any change that awards to the workers of one generation better earnings together with better opportunities of developing their best qualities, will increase the material and moral advantages which they have the power to offer to their children, while by increasing their own intelligence, wisdom and fore-thought, such a change will also, to some extent, increase their willingness to sacrifice their own pleasure for the well-being of their children." And these children rendered stronger and more intelligent will provide a better environment when they grow up. The effect goes on piling up. Changes in environment start forces which continuously and cumulatively change succeeding environments. The statement of the biologists is therefore too sweeping and belittles the importance of acquired characteristics and the causes that affect them too much in preference to the inborn qualities. Both are equally important and must be considered as coordinates of each other.

The other criticism of the biologists bears upon the propositions laid down by us in regard to the relation of the changes in national dividend and economic welfare. Their criticism is specially against the first two propositions i.e. those concerning the increase of national dividend and its redistribution in a manner which increases the share of the poor. They state that any efforts resulting in increase of national dividend will interfere in the processes of natural selection and will enable feeble and weak children to survive, which will act as a cumulative influence in weakening the nation as a whole. Similarly any redistribution of national dividend in favour of the poor will be tantamount to giving a lease to the inferior stock and will result in the same weakening of the whole nation. Thus the propositions laid down by us for the increment of economic welfare and through it of welfare generally seem to be of doubtful efficacy, when looked at from this point of view.

There is no doubt that a softening of the environment does give a chance to the weak children to survive and that this may be the cause of the deterioration of the strength of a nation. But the importance given to this possibility is too much out of proportion to the truth it possesses. There are two reasons for this:

- (1) The weak children who survive, if their weakness is not hereditary but only accidental, will produce children who have equal chance of being strong as any other children.
- (2) Increase in wealth not only makes for the survival of the unfit, it is also responsible for avoiding the possibility of the weakening of the fit. If proper means for supporting life were not available it is likely that those who are born fit may grow up to be weak. Wealth tries to avoid such an occurrence. The total effect of this twofold action is likely to be more beneficial than harmful.

In regard to the redistribution of national dividend in favour of the poor and the consequent effect on the strength and efficiency of the nation, it has to be remembered that there is no certain correlation between poverty and inborn inefficiency. Inefficiency is as much the result of bad environment as it is of bad inherited qualities. Therefore the danger hinted at, that a chance given to the poor to propagate more will result in a weakening of the nation is exaggerated and does not tell the whole truth. But even if this were true that there is some sort of correlation between poverty and inefficiency, it is not true that a betterment of the lot of the poor will necessarily lead to an increment in their reproduction with the result that the proportion of children from poor would increase greatly, in comparison to those from superior stock. It has been proved by experiments carried out by many that a betterment in the environmental conditions of the poor does not result in unbridled reproduction, but is the cause of a deterioration in the rate of reproduction. Thus a redistribution of income in their favour will decrease their number rather than increase them.

We can now conclude that none of the criticisms made by the biologists against the usefulness of our conclusions holds good. Our propositions, therefore, stand as they are propounded.

ECONOMIC PLANNING*

WHAT IS ECONOMIC PLANNING

In general. Economic planning is the rational control of the economic forces for the attainment of a well-defined objective within a given interval of time. It means the arrangement of the economic resources which are scarce in relation to the demands for their alternative uses in such a way that the satisfaction yielded by them is maintained at a maximum level. Economic planning involves, that is to say, the element of choice between the scarce means of achieving a pre-determined end. It is a carefully thought-out, correlated, purposive policy.

Broadly speaking the control over the economic resources falling within their scope may be exercised by individuals, business firms, industries or the state. But it is apparent that the range of the control in the case of the first three will be narrowly limited, whereas in the case of the state the control may extend over the whole of the productive resources of the country. The terms that are used for the purposive arrangement of the factors of production which the former command are 'business management' and 'rationalisation'. What is called economic planning refers, really speaking, to planning by the state.

Of course, the state may undertake to control the economic forces of a section of the whole economy or of a region of that economy or of the whole economy. This makes no difference at all. So long as the control is carefully thought out, is correlated and purposive it connotes economic planning.

In particular. But it must be clearly understood that economic planning to be effective must be of the economy as

* Barbara Wootton—*Plan or No Plan*; Ferdynand Zweig—*The Planning of Free Societies*; Claude David Baldwin—*Economic Planning: Its Aims and Implications*; J. R. Bellerby—*Economic Reconstruction*; Fabian Society Publications—*Can Planning be Democratic*; Sir Hubert Henderson—*The Uses and Abuses of Economic Planning* (The Bede Lecture—1947).

a whole and not *within* the economy, for the different sections or regions are the parts of one whole and cannot be segregated and planned without the whole economy being planned.

It is in this sense that economic planning is understood here—central planning of the whole economy.

Economic planning thus comprises the following essential elements. (1) It means the positing of a purpose, an end. (2) It means the positing of that purpose to be achieved within a definite time limit. (3) It means the rational arrangement of the economic resources for the achievement of the end. (4) It means the control of the productive resources subject to the plan. (5) It means the state control of the resources in place of decisions of individuals.

Types of Economic Planning. Economic planning is mainly of three types: (1) communist economic planning; (2) fascist economic planning, and (3) capitalist economic planning. The first and the second are the same in all respects except two. These are: (a) In the former all the material instruments of production are nationalised and directly controlled by the state. In the latter ownership of them rests with private individuals, but their use is directed by the state. (b) The purpose of the former is to promote the interests of the people as a whole, particularly of the masses who are down-trodden. It is planning for the increase of general social welfare. The object of the latter is to further the interests of a minority party—the militarists. It is planning for power politics, for war and not for economic wellbeing.

The stock example of the first is the communist planned economy of U. S. S. R. and of the second the fascist planning in Italy and the Nazi planning in Germany.

As these two types are similar in their working, they will be discussed under one heading—'economic planning.'

As to capitalist economic planning, it will be treated under an appropriate heading. Its nature, operation and scope will be pointed out there. Its examples are the New Deal of U. S. A. and War planning in Britain and U. S. A.

Why Economic Planning. The idea of economic planning is as old as the fourth century B. C., but the practice of economic planning dates from about 1918, particularly from 1928 when the first Russian Five-Year Plan was launched.

Since the last World War II economic planning has become the order of the day. It is regarded as the solvent of all economic difficulties, the panacea for all economic ills. It is advocated by the socialists or communists, nationalists or militarists, technocrats, industrialists, labourites, economists and politicians not only in backward countries, but also in advanced countries, even individualism-ridden countries.

The reasons for this enthusiasm are the following:

1. The disappointment felt with the capitalist system because of its shortcomings, which may be noted here in brief. They are:

(i) The system has resulted in awful inequalities. It has helped produce a vast amount of wealth but it has failed to distribute it equitably. A major portion of it goes to the masters and a very small share falls to the lot of the men. This means inequality which has become highly accentuated in our times.

(ii) Then the system has proved inefficient. It is motivated by profit only. Unless there is expectation of profit from an undertaking, it will not be started. The consequence is that a large amount of resources both material and human, remains unemployed when its employment may not prove profitable to private enterprisers. There is thus a great wastage of these resources.

(iii) As a consequence of (i) inequalities of income and (ii) profit motivation, the system makes for 'rationing by the purse'. It is misdirected towards the supply of the fleeting and unessential effective demand of the well-to-do while the basic and the urgent needs of the others remain unattended to. Thus it leads to diseconomies of consumption.

(iv) Then the system is subject to periodical holdups. As it produces on a large scale, for distant markets and its various enterprises work independently of one

another and in ignorance of what each one of them is doing it plunges into over-production at more or less regular intervals of time. This over-production means an economic crisis. Goods are there in huge quantities, the people want them in vast numbers, but they are not sold and bought because the prices that rule are not remunerative to the producers and merchants. The whole machinery of production, exchange and distribution comes to a standstill. There is great unemployment and, consequently, distress. The system is thus unstable.

2. The second reason is the hope held out by the planned economy of not only doing away with these defects of the free enterprise system but also of going better than it. Although no final judgement can yet be passed on the working of the planned economy where it has been introduced and on the results that have accrued therefrom yet there is no doubt that during the short period it has been at work, it has helped improve the economic situation very much. A few years back, both in fascist countries like Germany, Italy and Japan and in communist countries like Russia, its introduction brought about a tremendous increase in output in all sections of the economy, a vast improvement in employment if not the total abolition of unemployment and a wholesome reduction of inequalities, diseconomies, this particularly in the U. S. S. R. It is said that but for her planned economy Russia would not have come out successful in the last World War II.

3. A third reason, which, in a way, is allied with the second, is the success that the planned technique of production and distribution met in countries directly or indirectly belligerent, in which it had to be resorted to. This was especially the case in the countries of the West and in the U. S. A. In these countries their economies came to be practically planned for production to meet the maximum needs of the fighting forces and the minimum needs of the civil population. Production programmes were formulated, the available resources were requisitioned and allocated between the various programmes as best as possible through private or state agencies and the authorities after supplying the requirements of the war, catered to the needs of the

civilians by a system of rationing. These controls enabled the countries to tide over the situation very satisfactorily. This has led to increased faith in a planned economy. So, it is argued, that if regimented economy can lead to efficiency in war, why cannot it conduce to prosperity in peace?

What for Economic Planning? Economic planning has been defined above as the organisation and use of the scarce economic resources in such a way that the objective which is considered desirable is achieved. Economic planning is a means to an end, not an end in itself. What is the end that is sought to be gained by a planned economy?

The end may be economic or non-economic in character. It might be partly economic, partly political and partly social. Generally speaking the ends that have been pursued by planned economies of the last twenty years or so have been of a mixed type. They have been the following:—

1. Defence and power politics. Defence has been the aim in peace-loving countries and power politics—the desire to dominate other countries—in aggressive states.

2. Self-sufficiency and development of backward areas. Self-sufficiency which has been the professed objective of some countries has been, not unoften, a part of power politics programme. Development of backward or undeveloped regions has been the goal in order to bring those regions into line with the advanced regions as well as to meet demand for more food and raw materials especially in agrarian countries, or to tide over emergencies like depressions. They have sometimes constituted autonomous objectives for raising the material and cultural standards of the people of those regions—in particular of the farmers and the workers.

3. Full employment. Full employment means two things. (1) For the community, as a whole, it means the attainment of a due balance between work and leisure—a balance such that the fruits of the work combined with the leisure yield maximum total satisfaction. (2) For each individual it means a guaranteed right to a just share in the work, so long as income depends upon work, and to a just

share in the leisure. In ordinary usage, it signifies that work awaits every one who applies for it, whatever his status. Implicit in this is the assumption that the work that awaits is beneficial.

The same objective may be expressed as planning to raise the general standard of living.

Full employment has been the aim of all planned economies not so much to increase the national wealth as to secure a 'psychic income' to man, the income being the non-economic satisfaction those feel who have work to do and the self-esteem they imbibe as being useful members of society.

4. Economic security. This is also another version of full employment at fair wages—wages sufficient to support family life at a traditional standard at least. Economic security cannot be felt unless employment is assured to each individual who wants it and in a planned economy each must needs want it—at a fair wage.

If the planned economy is of the capitalist or fascist variety, economic security will mean the securing of the following conditions:

1. full employment
2. fair wages
3. fair profits

and therefore fair prices, rents, rates of interest, etc.

5. Social equality. This objective which is of a non-economic nature has its origin in two sentiments: (a) one is the resentment at the great inequalities that are the order of the day because of the ostentation of the rich. They lead to the waste of national resources which they perpetrate when the trifling wants of the millionaires are satisfied and the urgent needs of the poor—their necessities—are not cared for and the undemocratic tone they impart to society. (b) The other is the sense of justice. Due to realisation of

the inequitous character of the competitive system, the spread of education, the awakening of the masses and socialist propaganda, a sense of fair play and justice is forcing itself upon the masters—the 'haves' and a system in which social equality would prevail is becoming the ideal to be aimed at. Absolute equality is neither desired nor feasible. Hence the society which is attempted to be brought about is one in which only such inequalities are to be permitted as will be justifiable on grounds of differences in ability. In Russia the slogan 'from every one according to his ability, to every one according to his need' has been substituted by 'from every one according to his ability, to every one according to his work'.

6. Post-war reconstruction and reconstruction for peace. This is the objective in those countries which were affected by World War II. In them the war upset their economy and destroyed a vast amount of wealth. They are facing the problems arising out of this and are planning to solve them. The immediate problem is that of post-war reconstruction; the long-range problem is that of reconstruction for peace. Plans are thought out or put into action to solve both.

With regard to these objectives it must be noted that it is not possible to differentiate the economic from the non-economic nor is it desirable to do so. The economic objectives have their non-economic implications. Economic planning ultimately amounts to planning in general for it necessarily alters the relationship of individuals to one another and of one class of individuals to another class by effecting changes in their relationship to the factors of production as when private property in land and capital is abolished under state economic planning. In such cases economic planning more or less comes to planning individuals—changing their habit patterns.

The economic objective may, however, be put down as full employment, raising the standard of living or economic security as these three comprise more or less the same thing or lead more or less to the same thing. In economies planned for peace and prosperity—one or the other is declared the objective whatever be its repercussions in other fields.

The Quality of Economic Planning. The quality of economic planning must be fairly clear from what has been said under 'What is Economic Planning?' It might be clarified further. Economic planning was defined there as the control of the whole economy in a rational and co-ordinated manner for the achievement of a posited objective. It should be understood that imposition of restrictions by the state or interventionism does not fall under economic planning. In every country the state has been intervening to some extent. Now-a-days it intervenes more and more, in every field of economic life—production, occupations, distribution, investment, consumption, trading, etc. But such interventionism is not economic planning unless it involves control over the utilization of the economic resources for a particular purpose to be attained.

The control that economic planning implies necessitates the suppression of the economic choices that are open to individuals under the existing free enterprise system. Those choices are: (1) the choice of production—what to produce and in what quantities; (2) the choice of the rates of exchange—the prices at which goods are sold and purchased; (3) the choice of professions and occupations the people would follow; (4) the choice of saving and investment—how much of their incomes individuals would have for investment; and (5) the choice of consumption—what goods and how much of each the individuals would consume.

Under economic planning these choices are suppressed by the state wholly or partially. If they are suppressed wholly the control is absolute, otherwise partial. To what extent the state will suppress them will be decided by the state. But this is certain that it will not let any choice be retained that is likely to stand as a hurdle in the way of the achievement of the desired objective.

And the choices that are suppressed under economic planning are taken over by the planning authorities. The authorities decide what was governed by the decisions of the private individuals. And they decide that in such a manner that the end aimed at may be reached. The different elements of the economy are correlated with one another, thus

producing a certain whole animated by certain ends. It is an order of co-ordinated controls or regimentation.

CONTROLS

Kinds of Control. The control of the economic resources that devolves upon the planning authorities is of two kinds, (1) direct control, and (2) indirect control.

1. The direct control is exercised through positive administrative action like commands. It adversely affects the mechanism of the market and moves it away from the point of equilibrium. It is suited to a centrally planned economy.

2. The indirect control is effected through supplementing, encouraging or restricting the economic movements of the community. It does not destroy the market mechanism but affects only its trends. It is suitable to an unplanned economy.

DIFFERENT CONTROLS AND NEED

1. *The control of production.* This is a very important control. It is sometimes needed to stabilize production of particular articles as when the state wants that the people should not use more than a certain amount of them. It is sometimes required to restrict output of certain goods as when the authorities feel that their consumption should be curtailed. Generally, however, it is intended to expand production to improve the standards of consumption of the people or to develop the country. The expansion of output may be desired in special lines or on the whole—in special lines, as of war industries in planning for war or defence, of building industries in programmes of post-war reconstruction, of capital goods industries in schemes of industrialization, of agricultural industries in plans of increase of food grains and raw materials; and on the whole in planning for full employment or economic security or raising standards of living.

The control of production works on a wide field. It concerns the output of both consumption and production goods and affects, directly or indirectly, almost every do-

main of the economy. It will necessitate the control of prices of goods, the wages of labour, the investment of capital, the allocation of labour, the sale of commodities, etc.

2. *The control of consumption.* This is also a very important control. It may be expansive, aimed at increasing the consumption of some goods, or restrictive, intended to reduce the use of certain goods. The former is resorted to when the people do not want to have certain goods but the authorities wish to push their use in order to carry on mass production especially when the economy is under-employed or is working at a partial capacity. " , "

The latter is brought in to enforce increased saving when saving is particularly wanted or to effectively control prices in order to prevent competition among consumers. It is especially exercised in planning for war production or for accelerating industrialisation because then restrictions on consumption become necessary to obtain supplies for the first and to free goods for export and resources for investment for the second. It is also introduced when the authorities, in the interests of public health and efficiency, regard certain wants of the people such as those for spirits, drugs and useless luxuries, as harmful and wish to curtail or abolish them, or when they are desirous of checking the fickleness of consumers' tastes which sometimes upset best constructed plans or the 'plural voting' which the price mechanism gives to the rich and wealthy and enable them to satisfy their most trifling wants while the poor cannot get even necessities of life.

3. *The control of investment.* This is an extremely important control. It may be said to be the corner-stone of every planned economy. In every planned economy—planned for war production or industrialisation, or full employment, there are production programmes which are to be carried out to a limit such that at it the quantity of goods produced will meet the requirements of the situation. This can be done only by a rational utilisation of the economic resources. This is, in a very large measure, a question of control of the rate of investment. Similarly, the specialisation of industry and the concentration of industry are dependent upon the control of investment; so also is the changing of

the state, the structure and the efficiency of an industry, the prevention of an uneconomic use of the factors of production by firms or of wasteful competition among them.

4. *The control of professions and occupations.* This is not of much significance in a planned economy. The direct control in this connection is of the least importance. The state does not directly dictate what professions and occupations the people shall take to except in a slave economy. However, it might, in very special cases such as war emergency or famine, resort to it—that is, it might then conscript labour and force it to do the work needed in the emergency.

The indirect control of professions and occupations is made some use of. The various works to be carried out are decided upon by the authorities and they carry certain definite rates of wages. The workers can elect to enter any that suit them best from the point of view of the wage rates.

5. *The control of internal rates of exchange or prices.* This is also an extremely important control. It relates to the control of not only the prices of consumption goods but also the prices of the factors of production—wages, interest, rent and profits, the last three or two where they are allowed to exist as in fascist or capitalist planned economies. It implies, that is to say, also the control of functional distribution of income and as the functional distribution of income has a bearing on the personal distribution of income, of that income as well.

The control of prices is essential for the efficient control of production, investment and consumption. It helps bring about an adjustment between production and consumption. It enables better utilisation of the resources as when monopoly prices are controlled or prices of useless luxuries or of commodities during production for purposes of war. It ensures the stability of prices which is needed in a planned economy for stimulating investment on a proper basis. It imparts to the whole economy a sense of security which is a great desideratum these days.

The control of personal income is also an instrument of

forced savings or of equalisation of incomes.

But to be successful the control must comprise control in practically all domains. It must embrace the whole course of production from the raw materials up to the point where the goods get into the hands of the consumers. If any point in between the beginning and the end is missed the control of prices may prove ineffective. Also the control of prices in one industry must be supported by control of them in other industries.

6. *The control of foreign exchanges and foreign trade.* This is an extremely important control. It is necessary alike to stabilise the purchasing power of money within the country and to carry on the economy along planned lines. ;

The control of foreign exchanges means the control of exchange ratios and of movements of capital, gold, coins, bank assets etc., that is, in general, the control of the money and credit relations with other countries.

The control of foreign exchanges is necessitated by the concern which the planning authorities feel for the stabilisation of prices and wages at a level which they think proper (once it is reached). That level can be maintained if the economy is freed from disturbances due to fluctuations in foreign exchanges. The authorities, therefore, must stabilise foreign exchanges through devaluation or revaluation.

The control of movements of capital, gold, coins, bank assets etc., is essential to prevent the flight of capital outside the country to the detriment of the planned economy. In foreign countries capital might be comparatively exempt from burdens that exist in the country. The entrepreneurs will always prefer such places for the employment of their capital because of their advantages and shift their capital there. But this will deplete the home country of the needed capital. The Government, therefore, must place restrictions on its movement outside the country.

The control of foreign exchanges leads, though indirectly, to some control of foreign trade. The volume of that trade, it is plain, will be limited by the amount of foreign exchange

which the Government thinks fit to allot to the importers. But foreign trade has to be controlled directly. Free trade is inconsistent with a planned economy. Its existence will, at once, undermine that economy. But the control of foreign trade has to keep in view the requirements of the plan and the needs of the people. The economy might require foreign machinery or raw materials for the execution of the production plan and consumers' goods which are not available internally. Under such circumstances the control of imports will have to be such as will enable the authorities to get the required machinery, raw materials and consumers' goods. As to exports their control will concern the question of providing a cover for the imports. The Government must provide enough exports to pay for the imports. Of course, the Government might want to create foreign balances for use in the future. In that case it will export as much more as is deemed necessary for the purpose.

PLANNING IN PRACTICE

Stages and machinery. An economic plan represents a general view of the economy of a nation. It outlines its various branches and spheres and details a quantitative scheme for its working and execution in every branch or sector of the economy. Its essential elements are "plans consisting of decisions of policy quantitatively expressed in forms of programmes and such measures as may be necessary to ensure the performance of the programmes", an order of priorities being clearly put down.

Five Stages. Economic planning in practice passes through five stages. Each stage has its appropriate machinery

1. The first stage is the laying down of the general policy—the objectives to be aimed at and the rules for work. It is the function of the Central Government or the National Parliament.

2. The second stage is the drawing up of the Plan. This is done by the Central Planning Commission, a body of experts instituted for the purpose. The Commission frames a general plan, proceeding on the basis of a thorough and

elaborate survey of the actual and potential resources of the country furnished by the Statistical and Scientific Departments of the Government or attached to it.

The plan embodies the objectives formulated in terms of precise quantities, quotas of output for various firms and industries to produce, quantities of the factors of production to be allotted to these firms to enable them to work upto the quotas, allotments of finance, prices to be charged at different stages of production and execution, etc.

Along with the Central Planning Commission there exist regional, sectional, provincial and even corporation Planning Boards. The factories and concerns comprising the economy, also prepare their own plans and forward through the appropriate bodies—Planning Boards to the Central Planning Commission which has previously sent the general Plan to them.

The general Plan is then carefully scrutinized by the Central Planning Commission and suitably modified in the light of the several sub-plans. It is then ready.

3. The third stage is the adoption of the Plan. This rests in the hands of the National Government or may be entrusted by it to a Supreme Economic Council called into being or existing for this end. The Government or the Council will have power to alter the Plan—may be not substantially.

4. The next stage is the execution of the Plan. When the Plan is adopted, it is announced. It has then to be executed. The task of executing it is put in charge of the Central Administration which gets it carried out through its provincial regional and local branches.

5. The last or concurrent stage is the supervision of the execution. This is absolutely essential. Bottle-necks may appear and will have to be removed. New situations may arise because of new data, new facts and new requirements coming to knowledge and re-adjustments of the Plan might have to be made in their light. Then there is the question of drawing up the succeeding plans and improving the machinery of planning in future. All this cannot be done without con-

tant supervision

The supervision of the Plan may be entrusted to the Central Planning Commission or to the Supreme Economic Council or to a special body appointed for the purpose.

Besides the Central and other Planning Commissions, the Scientific and Statistical institutes, the Administrative Department, the state might have as many other bodies as it thinks fit to ensure that the Plan goes on smoothly in every branch of the national economy. For example, it might appoint special bodies to fix the prices of the production goods and to organise and conduct the trade and commerce of the country, to fix priorities, to allot productive resources, etc.

THE PRINCIPLES OF PLANNING

Economic planning is a regime of controls or of the transfer of the private economic choices to the planning authority. On what principles does that authority carry out the controls or make the choices transferred to it?

Questions to solve. In this connection there are, in the main, five questions to solve :—(1) How to ration the goods and services already produced among the consumers? (2) What kinds of goods to produce and in what quantities? (3) How to allocate the factors of production among the various industrial units so that the goods required to be produced may be produced in the needed proportions? (4) What shares of the production in terms of goods or income are to go to the contributors to their production? (5) What amount of the current production is to be saved for the future—that is, for investment?

Their competitive solution. These questions every economy—planned or unplanned—has to solve. The way in which the unplanned—the competitive economy solves them is stated here briefly so that the planned economy's approach to their solution, to be given shortly, may, by comparison, be clearly understood.

In the competitive economy the price or market mecha-

nism acts as their solvent. First the price mechanism helps ration the existing supplies of goods and services among the consumers. Prices of goods on the market are an index to the situation of supply with regard to those goods. High prices of goods mean a comparative scarcity of them and low prices a relative abundance. But if prices are high the quantity purchased tends to diminish and if the prices are low, to increase at a given time in a given market. Thus the supply gets adjusted to purchases and goes where it is most in demand. Equilibrium between demand and supply is effected.

Secondly, the price mechanism governs what goods shall be produced and in what proportion. Production is guided by demand—the consumers' preferences. The consumers express their preferences for different goods in the prices they offer for those goods. If they offer higher prices for some goods than the prices they offer for other goods, it means that the former are wanted more than the latter. The producers will consequently speed up the production of the former relatively to that of the latter and their proportion will increase as against that of the others. This will happen because the producers expect larger profits from the production of the former than from that of the latter.

Thirdly, the price mechanism regulates the allocation of the factors of production among the alternative purposes of producing goods in the desired quantities. Production is carried on by the employment of the factors of production. These have their market prices like consumption goods. The price of land is rent, of labour, wage, of investment, interest and of enterprise, profit. Larger quantities of the factors are wanted in trades that are on the up-move and smaller in those that are on the decline. This sends up their prices in the former with the consequence that the quantities of them there increase and lowers the prices in the latter resulting in their leaving these in the prospect of getting better remuneration elsewhere. Thus the price mechanism distributes the factors of production among alternative uses.

Fourthly, the price mechanism determines the shares of the wealth produced that should go to the contributors

to its production. The prices of the factors of production act, on the one hand, as a force regulating their supply and distribution among production units and, on the other hand, as rewards of those factors for the work they do. The prices, that is to say, are in the former case the costs of production and in the latter the shares of the production in terms of income that the owners of the factors receive.

Fifthly, the price mechanism decides the proportion of the current production that is to be saved for the future. Capitalist production is round about. Saving and investment are necessary to carry it on. Both are affected by the price mechanism. The price of investment is interest. The rate of interest dictates saving to some extent, but investment, more or less, absolutely. If it rises, investment is encouraged, if it falls investment is held back.

It might be noted that all these work on the principle of marginalism. The consumers, the producers, the owners of productive factors and the investors are actuated by the desire to maximize their satisfaction and profits and incomes. These tend to be maximised when the point of indifference—the margin is reached. At that point further activity on their part stops. In the case of purchases of goods by the consumers, the point comes when the marginal utilities of their alternative purchases are equalised; in the case of the producers this happens when the marginal productivities of the factors employed in the alternative uses, are equalized; in the case of the owners of the factors of production this occurs when the remunerations they receive out of the wealth they have helped in producing become equal to their marginal productivities, and in the case of the investors this comes about when the rate of interest that is paid for their investments is equal to their marginal abstinences or liquidity preferences.

Their planned solution. The solution of these five questions under a planned economy may now be considered. Planned economy, it must be borne in mind, is based on the abolition of private economic choices, the socialization or direction of the material instruments of production and the control of practically all economic activity and process by the state. This means that in regard to this solution of the questions it will

be the decisions of the authorities that will count and not the market mechanism—the impersonal laws of demand and supply. This is explained below.

Rationing of supplies among consumers. (i) The Planning Authorities may decide to ration the restricted supplies of goods among the consumers according to the competitive principle. This will work only if the consumers' choices are left to individuals. The consumers' preferences for different goods will then tend to fix the prices of the goods at points that will clear the market of the existing supplies. In the case of greater scarcity of some goods their prices will rise, in the case of lesser demand, the prices will fall in order that demand and supply remain in equilibrium. This is exactly the same solution as that of the competitive system—the solution by the impersonal forces of demand and supply.

If the Planning Authorities take recourse to the competitive solution, the planned economy will not differ from the unplanned economy in any respect other than this that it will be composed of socialized enterprises.

(ii) The Planning Authorities may decide to do away with the price system altogether and to ration goods among the consumers by means of warrants permitting them to receive from authorized shops definite quantities and no more of the different goods they need. This way of rationing is extremely difficult to give effect to. It was resorted to in the Soviet Union in 1920 but as it produced a good deal of chaos, it was given up and the price system with a difference (explained under (iii) below) was introduced.

(iii) The Planning Authorities may elect to have a modified price system. This is the best thing to do and it serves the aims of the authorities successfully. This consists in fixing the prices of goods sold at the shops. If at those prices, the consumers guided by their preferences buy the commodities in such quantities that the supplies of them are exhausted, well and good: demand and supply will balance. But if this does not take place and some supplies are left unsold, the authorities either reduce the price or raise wages to induce the consumers to buy more and thus deplete the market of the existing supplies.

If any particular goods which, for one reason or another, the authorities want the people to buy and consume are not disposed of, the authorities compel the people to buy certain fixed quantities of them along with others, at suitably fixed prices in order to attain the desired end.

This modified price system of rationing the goods may be supplemented by a system of rationing by cards which will permit definite quantities of certain articles and no more to be purchased at the prices charged for them.

Rationing by cards is introduced when there is a great shortage of supplies so that everyone may have a certain necessary share of the goods. The method is also taken advantage of by the authorities to favour certain sections of the community and to penalize others— the former being those who are specially helpful and the latter those who are recalcitrants or regarded as opponents. When this is done, the cards will permit higher rations to the first group and lower rations to the second.

What goods to produce and how much of each of them to produce?
In connection with this, the Planning Authorities have to decide whether they should produce, and in the required quantities the articles which the consumers *want* or which they *need*. If they act according to what the consumers *want*, they will have to guide production on lines that the consumers' preferences dictate as indicated by the prices the consumers are offering or are likely to offer for different goods. If they go by what the consumers *need*, the authorities will have to draw up a scale of public or authoritative preferences and produce those goods and in those proportions which this public scale warrants. The scale will take into consideration the private individual preferences as much as the authorities think fit, but will make full allowance for the political, social, educational and cultural aspects of the thing in the future set-up.

As economic planning pre-supposes a correction of individual tastes, the Planning Authorities will, more likely than not, apply to the solution of the question 'What to produce and in what proportions?' the scale of authoritative preferences.

It should be noted that the decision with regard to production will be two-fold. The first will concern the manufacture of those quantities of consumption goods that have been approved for current consumption and the second the production of capital equipment for raising future standards.

Allocation of the factors of production. When the goods to be produced in such proportions as approved have been decided upon, the question of allocating the requisite productive resources among the various industrial units that are to produce them has to be settled. This is necessary so that the production may be executed with the least cost. The authorities solve the question by direct decisions as to the proportions of the productive resources that are necessary to allocate to the firms to enable them to carry out the production plans as laid down. This is to say that the allocation is made as the authorities see fit, of course, after the experts on the matter have been consulted. If they think that more of land or capital or of both is needed in one industrial unit than in another they will allot more to the first than to the second and will do the same in regard to labour as far as possible.

Land and capital are easily allocated in this way as the Government has complete control over them. But owing to the property in themselves remaining, to a very large extent, vested with the workers, the direct method of allocation cannot be applied in their case unless responsive cooperation is forthcoming from their side or they are by temperament submissive. The Planning Authorities, therefore, have to rely on the price mechanism to effect their allocation. The necessary rates of wages are offered to attract them into the various works and thus the requisite supplies of workers of different categories tend to get distributed among the various enterprises and concerns. The principles on which wages may be fixed will be given later. The principle here hinted at according to which the allocation of labour takes place is that of efficiency and scarcity or of market mechanism.

It deserves to be noted that in a planned economy,

at the back of all principles is the power reserved to the authorities of industrial conscription, of compelling individuals between certain age limits, in times of national crisis, to work wherever wanted. Also it should be noted that appeals to the patriotism of the workers and awards of honours and titles are not unoften resorted to, to attract workers particularly those with scarce talent and ability.

In regard to production by the allocation of the factors of production it needs further to be stated that although the planned economy will expect the productive plants each to show profit or, at least, to cover costs yet the existence of these plants is not dependent upon their showing profit. They will be allowed to continue to exist, and be even expanded if they are working at losses provided their continuance or expansion is considered essential in the interests of the society. Their losses in such case, will be met by subsidies from the national funds. Planned economy is not profit-motivated. It is actuated by motives other than profit—desire to promote general welfare, etc.

But it should be pointed that though the industrial plants of the economy may not, separately, be running at profit, the economy as a whole must be a profitable concern over the long range, otherwise its existence is in danger. Profitability is an economic principle and not a capitalist one. This fact has come to be recognised in the Soviet economy and the communist government has restored profitability over a wide range. It requires public firms not only to avoid losses but also encourages them to make profits. Of course, the amount and the use of profits made are carefully regulated. Part of these is taxed into the general budget, part is credited to the enterprises for capital development within the industry and the remainder they are allowed to retain for payment as bonuses to the staff and improving the conditions of the workers.

Distribution of income. The total annual income of a planned economy will include the following sources:—

1. The return from national resources and land.
2. The interest on capital (as an accounting cost).
3. The charge made for unestimatable elements or

social costs (communal consumption or public utility services) if any.

4. The profits arising from the state operations from socialized enterprises.
5. The proceeds of any taxation on labour income that may be levied.
6. The accounting costs of the services of labour.

From these sources the state constructs its budget and carries on production. The point to note is that as capital equipment, land and mines, and enterprises are nationalized the returns from these, interest, rents and profits go, may be as accounting items, into the pockets of the state and not to private individuals. Labour remains the only private factor of production.

The total annual income is to be distributed among the following main lines of the national economy:—

1. Costs of repairs, replacements, renewals, depreciations, etc.
2. Investments—costs of extension of mines, factories, lines of communication, trading facilities, farms, new undertakings, etc.
3. The charges for items of public utility or “communal consumption”.
4. Overhead charges of the state—the cost of running government departments, national defence, research, scientific investigations, etc.
5. Wages of labour.

Wages of Labour. Trade Unions. The question here is how to determine the wages of labour—the share of the national income that will go to a private factor of production. The question includes the determination of a wage level and a scale of wages. What the wage level will be will depend upon the proportion of the income that is set apart for meeting the charge of wages—the wage fund. The wage scale will be constructed out of the wage fund.

The determination of the wage fund is a duty of the state authorities. They will determine it by taking into account

all the other items of expenditure, particularly investments for improving future standards. It must, however, be equal to the total value of consumers' goods and services released for personal consumption in a given period. If it is not so as when producers' goods industry is desired to be rapidly augmented, wages will have to be cut down or prices raised.

On the basis of the aggregate wage fund, the Planning Authorities draw up a complete national scale of wages and the fund is divided among the workers and employees in accordance with the wage scale.

The fixation of a scale of wages may be based upon a number of principles. The authorities may apply the principle of economic equality, or of the normal needs of a family, or of efficiency or scarcity or of responsibility, or of even racial and national discrimination.

In the Soviet Union the authorities first tried to fix wage rates on the principle of economic equality, later on they applied the principle of efficiency and scarcity—"from every one according to his ability, to every one according to his work". This is in vogue there at present great inequalities being, of course, avoided. In Nazi Germany the principle of racial discrimination was resorted to. Germans, Poles, Jews, etc., were paid for the same job different wages. In Fascist Italy where authority and hierarchy were dominant the principle of responsibility played the chief role.

In some planned economies the principle of "normal needs of the family" may be adopted, workers with larger families being granted special rates than those with smaller families. In some other countries wages might be differentiated among workers on a geographical or regional basis.

The scale of wages, once it is fixed, must be adhered to by all concerned. It is not open to labourers to have it altered by resort to strikes. Strikes and lock-outs are definitely banned in a planned economy. They cannot be permitted. If they are permitted they will constitute a danger to the working of that economy.

Trade unions flourish in a planned society and play an important part in it. But they are not militant bodies—organs of class struggle, as in the capitalist economy. In the capitalist economy they are formed to extract from the management the maximum wage possible at the cost of profits; that is, a wage that will be equal to the marginal productivity of labour. In a planned economy, however, such an objective is not justified. There is no room for class struggle there, as the profits, when they appear, are controlled by the authorities as to their magnitude and their use. Only such an amount of the profits and such a use of them is permitted as will be compatible with the objectives of the plans.

The functions that the trade unions perform in a planned economy are the following:—

1. They represent their members in all matters connected with employment and working conditions. They see that the legal provisions regarding the protection of workers as to social insurance, wage payment, health and accidents prevention, etc. are carried out by the management.
2. They also co-operate with the management and the state authorities in the running of industry. That is, they assume a positive responsibility in the prompt fulfilment of production plans in the state undertakings and participate in the control and organisation of economic activities.

All this means that trade unions in a planned economy place an equal emphasis on improving the standard of life of their members and on positive co-operation to advance efficiency and productivity of the members.

It also means that the wage policy is not a matter of fight between profits and wages, capital and labour, but that of trade union cooperation in drawing up the economic plan which necessarily includes the general wage policy.

Saving and investment. The sources of these in a planned economy are two—(1) socialist accumulations and (2) individual incomes.

1. The Planning Authorities expect each unit, firm, factory and concern to save a certain proportion of its profits,

and to deposit it in the state banks. The Government might also levy some taxes. The Turnover Tax is the most important of these in U. S. S. R.

2. The saving and investment by individuals is, generally, made in response to the same type of inducements as obtain in capitalist countries. Loans are floated by the authorities and the people are urged to subscribe to them, the reward offered being a rate of interest. The rate of interest is sometimes supplemented by the chance of winning a lottery in which the prize is either a sum of money or a privilege such as a free holiday. The rate of interest is kept as low as possible by appeals to enthusiasm and patriotism of the people.

Out of the receipts from the two sources, the Planning Authorities make advances to various enterprises for long term investment at low rates of interest or at no interest whatsoever.

If the investment funds are not sufficient, the Government can, through the banks, issue money enough to meet the needs of the situation.

Money and credit in planned economy. The question of investment of funds is a question of financing and financing means provision of money and credit. The role of these two in a planned economy may be explained.

In an unplanned economy money and credit play an independent role. They are the pivot of that economy as the economy is money-centred and credit-centred. Its functioning is guided and regulated by them. It cannot work beyond the extent to which they are there, that is, to which finance can be raised. It has to adjust itself to the finance available and the availability of finance depends upon the profitability and solvency of the enterprises to be run. Unless they are profitable, finance is not forthcoming. It may be repeated that unplanned economy is profit-motivated.

The case, however, of a planned economy is quite the opposite of this. In it money and credit lose their independent and pivotal position and come to occupy an altogether

subordinate place. They become subservient to the requirements of the economy as a whole. They serve in it mainly as an instrument of cost-accounting and pricing. The planned economy is neither money-centred nor credit-centred nor is it profit-motivated. It is rather commodity-centred. If there exist in it unutilised resources—human and material,—it is so not because there is lack of profitability or there is lack of finance to put them in employment but because there is lack of organisation or coordination or accountancy. Financial problems have no priority, as in a capitalist economy, over production problems. Finance-money and credit can be easily provided and are provided if the resources are mobile and their employment is useful to the community. In fact the guiding principle of a planned economy is that it must be furnished with financial means enough to enable it to reach full capacity. That is, finance adjusts itself to the needs of the planned programme. As has been well illustrated by the Soviet economy, a planned economy is an expansionist economy with regard to money and credit as with regard to every other thing.

Finance is the task of banks to supply. But banks in a planned economy are not independent institutions run to earn profits for their shareholders. They are simply adjuncts of that economy and serve as a special instrument for carrying out the financial arrangements in regard to the execution of the plan. As such they become quite centralised and have the following two functions:—

1. They act as the cashier of the State and of the planned economy. They issue financial resources to the enterprises for the execution of the planned programme as duly approved by the authorities.

2. They supervise the execution of the planned programme so far as its financial aspect is concerned. They see whether the enterprises for which finance has been provided comply with the financial provisions of the plans adopted for them. The supervision is from the viewpoint of compliance and not of profitability.

The above explanation makes plain that in a planned economy it is the decisions of the Planning Authorities that make for the solution of the five questions. Those decisions

supply a substitute for the price mechanism except in the case of the allocation of labour and in the private sector of saving and investment. In both these the market mechanism is more or less, allowed to work. They fix the prices and quantities of goods produced, exchanged, invested and consumed by more or less definite schemes and keep demand and supply in equilibrium.

It might be said that though the decisions are taken without any reference to the index of price movements, yet mentally they are made on the basis of the same process of reasoning. In every respect alternatives are considered and that alternative is selected which is likely to give the best results. "Planned economy is not price-oriented but technically-oriented". It carries on by direct administrative action and not by any monetary scale of values.

CAPITALISTIC ECONOMIC PLANNING

The question here is: "Is economic planning compatible with capitalism?"

1. If economic planning is understood in the way in which it has been explained —planning of the economy as a whole—then the answer to the question is in the negative. Capitalism is an economic organization in which the material instruments of production are owned or hired by private persons and operated at their commands with a view to selling at a profit the goods and services that they help to produce. Private ownership of the means of production and free contract are the main characteristics of the system. Under it industry is composed of hundreds and thousands of firms which either work independently or are inadequately co-ordinated. Planned economy is an organization in which the instruments of production are either, more or less, owned by the state or completely controlled by it. Freedom of contract, except in a minor sector, already pointed out, is absent. The industry is one co-ordinated, co-operating unit.

This being the difference between the two economic systems economic planning of the type discussed above cannot be possible under capitalism. It needs single central control of the whole economy. That control is its pre-essential.

Capitalism implies multiplicity of controls which is foreign to economic planning. To plan economically an economy must plan the allocation of all the economic resources within its jurisdiction. There must be a master unified plan for the whole economy. Effective planning is impossible unless the Planning Authorities have full power of control over the direction of production resources, a power of control which means the power to say 'this and that plan shall be carried out.'

2. If by 'economic planning' is meant, as a few think it is meant, any state intervention in the free working of the market mechanism with the intention of correcting or at least alleviating the economic ills of the society in one direction or another, then economic planning is consistent with capitalism. The state has resorted to such interventionism since defects of the *laissez-faire* system shot into light in England and every other capitalist country and it has resulted in much good being done. But to call such interventionism economic planning is wide of the mark. It might be state planning but not state economic planning. It might be termed state economic action. It certainly modifies the conditions under which the price mechanism works out the allotment of resources, but it leaves the ultimate result indeterminate, a matter of individual decisions.

Most of the schemes, entitled agricultural plans, industrial plans, population plans, communications plans, etc., which have appeared in cold print during recent years in most capitalist countries including our own, are of this character. They envisage the state either as a supervisory body or a body enforcing the schemes by legislation or persuasion or other indirect ways while leaving the operation of them in private hands on, more or less, a voluntary basis.

3. If 'economic planning' be taken as meaning, which some people do, the state control only of what might be called as 'key' industries, strategic points in the economy, leaving less important goods and services to private enterprise, the control of money and credit through central banking policy, the control of investment and long-range arranging of public works, then also it is compatible with capitalism. In fact when planned capitalism is thought of it is, to a large extent

associated with these and other similar measures of pricefixing, quota controls, restriction of acreage, etc.

Mostly these varieties of controls are tantamount to interventionism. In regard to them it might be said (1) that the determination of 'key' industries is rather difficult and complicated; wishful thinking here may drive out common sense; (2) that with less than complete control of investment there is likelihood of private sector running counter to that controlled by the state authority; (3) that investment policies of private firms would necessitate a scrutiny of the proposals as to whether they are good or bad and how much funds should be invested in one industry rather than in another. In consequence of these three points there will be a tendency for extension of state control to other sectors, and the implements of price fixing, quota controls, acreage restrictions, etc., might be used to render the private sector dependent upon the public sector. If this is carried to its logical limit the resulting system will be capitalism in form rather than in insubstance.

However, it may be asserted that what planning of capitalism is feasible can be attained not by direct control but by indirect means like compensation, supplementation, stimulation, or restriction. By these means only can the state regulate the movements of hundreds of thousands of independently working or inadequately co-ordinated industrial units of an unplanned economy so as to achieve results more or less approaching those gained under a planned economy.

This is so because under capitalism the government suffers from one serious handicap which is that there is no single important factor that is controlled by it. Therefore, what it can do is to use indirect methods to supplement, or help or restrain the economic activity going on. For example, it cannot fully control the output of consumption goods but it can supplement or subsidise their production; it does not undertake the large scale production of capital goods but it can promote their production by cheap or guaranteed loans; it does not fix the average prices of goods, but it can influence the general level of prices through its monetary policy and may fix ceiling prices, in case of need, of important goods; it does not control the monetary policy but it can exert pressure on it through laws affecting

the note issue and through borrowing through banks; it has no direct control over the general level of wages, interest or rent but it can influence them all in some degree by its own terms of borrowing and conversions; it has nothing to do with the distribution of income in general but it can redistribute a large portion of it through taxation; it does not determine wage rates but it can fix minimum wages.

And there are innumerable other devices at the command of the government by which it can re-align and re-adjust the economic processes of a society. Deserving of particular mention is the device of the control of investments, including under-investments, not only investments by private corporations and subsidies to private business units, but investments in public works and in schemes of communal consumption—like those concerning education, housing, transport, sewage, physical culture, etc.

If all these measures are judiciously combined and co-ordinated, they will go a long way to achieving the objectives which economic planning aims at attaining—namely, full employment, reduction of inequalities, improvement of standards of living, economic security, etc. Of course, the laying down of precise targets and hitting them within a definite time limit will not be so possible, but short of that much will be attained.

ECONOMIC PLANNING AND ECONOMIC THEORY

No theory of economic planning exists. What has been done is to attempt to adapt the principles of individualist enterprise to the collectivist. On this point there has been raging a hot controversy between economists. Some hold that those principles are applicable to a planned economy, others that they are not. Whether this is so or not will be clear from what is said below.

Economic theory, as it exists, is concerned with the relationship between scarce means and alternative ends. It explains the disposal of scarce means between alternative ends so as to gain the best results. It does not bother itself with what the ends are. Their determination is a matter of the objective of economic activity, not of its carrying on or

performance with which the disposal of scarce means is related.

In the capitalist economy the ends (a scale of values) are determined by the consumers' preferences for different commodities. These decide, as already pointed out, the quantities of those commodities which, relatively, will be produced. The producers, guided by those preferences allocate the scarce factors of production between alternative uses in such a way that the required quantities of the commodities are produced at the least cost. The end of economic activity in a free economic order is thus presumably the satisfaction of the consumers' wants.

A planned order has also a scale of values—ends. It is dictated by more or less arbitrary decisions of the Planning Authorities. It may be the same as in the unplanned system—the satisfaction of consumers—or any other such as social security or full employment. The scarce productive resources are allocated between the different plants so as to conduce to the attainment of these ends in the most satisfactory manner. No doubt, this is done more or less in an arbitrary fashion, but it is done with the same end in view as in the competitive organization and on mentally the same principles.

Thus theoretically and basically, the role of economic theory in a planned economy remains the same as it is in the free enterprise system. It is a matter of indifference to the theory whether the ends—the scale of values—is arrived at authoritatively or democratically. It is not concerned with the question of the determination of the objective of economic activity but with only the performance of that activity.

There is, however, a difference to be noted in this regard between the two economies. It consists in this that as the scale of values in a planned economy changes from that in an unplanned order, so the proportion of the factors of production that would be allocated would change in response to the new scale of values.

This will simply denote a change in practice but not in the part played by the economic theory. An excellent example of it is furnished by the planning of production for the prosecution

of a war. In a war the objective of economic activity is the supplying of the needs of the fighting forces to the maximum possible and of the civil population to the minimum necessary. To achieve the purpose the productive factors are diverted from non-defence industries to the defence industries as are so many other materials. The civilians feel the pinch of this new scale of values but the theory of Economics is not affected thereby. It has been aptly said that "the economics of war is a special study in the allocation of real means to a specific, real end".

One thing deserves to be pointed out in this context. It was said above that the decisions of the Planning Authorities as to the disposal of scarce means between alternative ends are more or less arbitrary. This is so because there does not exist in a planned economy a theoretical apparatus such as the market or price mechanism which can measure preferences and probabilities. Such an apparatus is absolutely essential for that economy to be placed on a scientific basis. In its absence economic calculation becomes difficult if not altogether impossible and the possibilities of decisions being injudicious or of a hit-or-miss variety or swayed by immediate and powerful interests, are very great, i.e., of decisions that might land the economy into great and grave losses.

CONDITIONS OF SUCCESSFUL ECONOMIC PLANNING

Economic planning is not easy like going to the pictures. It is not merely a question of some sort of direction and prescription about investment of economic resources in several directions. To be a success a planned society must satisfy certain conditions. These are enumerated below.

1. The plan must be a sound plan. It must be the result of thorough and profound research, investigation and exploration of the natural resources and good accountability. It must be based on true facts and scientific accounting. It must also have a scale of priorities. If this is not so, the plan is doomed to fail.

2. The execution of the plan must be in the hands of the right type of personnel. The personnel must be honest and properly trained. They must carry out their duties with

a full sense of responsibility. They must be moved by a sort of fighting spirit which is determined to be victorious at all costs.

3. Proper co-operation from the side of the people must be forthcoming. They must be bound together by a unity of will and purpose to make the plan a success. They must regard the plan as their own and must be ready to make sacrifices or accept compulsion in the general interest. All this is there to the required degree when a country is on war and it is thus very easy for planning then to be successful.

4. The objective of the plan must be clear and definite. It must not be liable to change with change in government brought about by party politics. If it is subject to change, there is no stability with regard to the plan and its smooth working is jeopardized. In emergencies like war, famine, depression, the objects become clear and definite and planning moves comparatively along smooth lines, particularly during a war.

5. There must be a certain degree of uniformity of wants and desires among the people or a scientific apparatus for measuring the choices of the consumers. If the wants of the community are homogenous or if, in the event of this condition not being fulfilled, the wants can be scientifically calculated, the amount of the goods or different quantities of different goods required will be properly estimated and planning of their production will be easy. It is extremely difficult to plan for the satisfaction of a multiplicity and variety of wants without a scientific knowledge of the consumers' preferences for then goods are likely to be produced, in some of which the supplies greatly exceed the demand and in others of which the demand is greatly in excess of the supplies.

6. The political government must be strong enough to exercise authority, to maintain discipline among all concerned and to assure law and order in the country. It must be ready to punish delinquents and dishonest officials and propagandize a sort of a common belief that the planned order will be a 'natural', a 'rational' and a 'scientific' order, so as to inspire complete confidence in it.

OBJECTIONS TO ECONOMIC PLANNING

It has been pointed out that economic planning offers an excellent solution of the short-comings of the system of private enterprise. Moreover it holds out the promise of showing greater achievements than that system has made. It is to be the remedy of all economic and social ailments. It will do away with gross inequalities of income, woeful diseconomies of consumption, wastage of resources, economic crises, low living standards etc.

Yet the good that flows from economic planning has to be paid for. Its price is the loss of economic freedom of individuals—the disappearance of their economic choice of production, of occupation and profession, of saving and investment and of consumption and its substitution by a regime of regimentation.

This is one objection that can be and is levelled at economic planning. And because of it some countries which prize economic freedom more than economic security and better living conditions like U.S.A. are not willing to change over from private enterprise to a planned order.

But the objection is not very serious. The loss of economic freedom involved may be more than compensated by the gain in freedom from want and idleness. In a country like America the objection finds favour because the economic security there is much higher than in any other country. In poverty-stricken countries like India and China it may not be much bothered about.

Another objection is that economic planning cannot bring about an optimum allocation of resources as a central authority which will be responsible for the allocation of resources can neither gauge the needs of the society nor arrange the most economical combination of the factors of production. To do this it will have to depend upon its judgement. Injudicious and haphazard judgements will result in failures or losses. In an unplanned economy failures and losses are self correcting. In a planned economy they tend to be cumulative,

Certainly if judgments are wrong failures and losses will ensue. But if economic planning is rational and judicious which it has been defined to be the chances of failures and losses are minimized. The best brains of the community will be behind the economy and they will do their best to avoid them.

A third objection is that economic planning does not offer an automatic spur to activity as is found in the profit incentive of the private enterprise system. In the absence of such an incentive people will not put in their best efforts to make economic planning a success.

No doubt individualistic economic motive will be lacking in a planned economy, but the advocates of the system have faith in the gap being filled by equally potent motives. They believe that the individualistic habit pattern of the people will give place to collective habit pattern and they will begin to do for the advancement of the community what they have been doing for the promotion of their own interests.

There is still another objection which has to be thought of. It lies in the risk that economic planning might bring an end to all freedom and not only to economic freedom. Democracy is a good which is held in very high esteem everywhere. Idealistically, planned economy represents the highest type of democracy, based as it is on the co-operation of the people. But it involves concentration of power, the creation of an all-powerful, a Leviathan state monopolizing both political and economic power. If this power falls into the hands of unscrupulous persons bent only on promoting their own or their party's interests, they might suppress democratic freedom to such an extent that it will exist only in name. All types of freedom will then go—freedom to choose rulers, freedom of speech, freedom of association, freedom of religious belief, etc.

This risk, it might be said, is political rather than economic. The only safeguard against it is perpetual vigilance. Perpetual vigilance, says Laski, is the price of freedom.

